



FTTC



**2021**  
TRAINING BOOKLET

# DRIVING TO BE A MASTER MECHANIC

SUNDAY, OCTOBER 3<sup>RD</sup> –  
FRIDAY, OCTOBER 8<sup>TH</sup>



# FTTC: LEARN THE INNER WORKINGS OF SPARTAN APPARATUS.

## EVT test

Attendees will have two opportunities to take EVT exams; Sunday, October 3<sup>rd</sup> and Friday, October 8<sup>th</sup>. Maximum of two regular exams, six re-certification exams or a combo of one regular and three re-certifications may be taken (Re-certification exams are for technicians whose certification is expiring). If you plan to take advantage of the EVT Certification testing held during the Conference, **you must mail, fax, or complete online the Exam Registration Form to the EVT Certification Commission by September 12<sup>th</sup> (for the Sunday exam) or September 17<sup>th</sup> (for the Friday exam)** to meet the 21-day advance registration. See form. **Study materials are not furnished.**

Preparation is very important to the successful completion of the EVT exams. To prepare for the exam, review the learning objectives and study the references listed, which can be downloaded by going to [www.evtcc.org](http://www.evtcc.org), then clicking the “Exams and Preparation” link.

## Conference registration

**Registration is \$750 per person**, and includes 5 days of meals and classes. This fee does not include lodging and airfare (**SEE HOTEL RESERVATION INFORMATION OF YOUR CHOICE**).

Please review the Class Schedule in this booklet prior to registering online, which will open in June 2021 at [spartaner.com/FTTC2021](http://spartaner.com/FTTC2021). Classes will run from 1:00 p.m. to 4:30 p.m. on Sunday, October 3<sup>rd</sup> and 8:30 a.m. to 4:30 p.m. on Monday, October 4<sup>th</sup> through Thursday, October 7<sup>th</sup>. Scheduled breaks will occur daily from 10-10:30 a.m. and 2:30-3:00 p.m.

Spartan takes great pride in educating each and every one of you on the Spartan Fire Vocational products and its components. Our pride coupled with your desire to understand the importance of peak performance of your apparatus has brought us to our 26<sup>th</sup> anniversary! The substance of the 2021 conference promises to cover issues of importance to all attendees.

Visit [spartaner.com/FTTC2021](http://spartaner.com/FTTC2021) for the most up-to-date class information.

If a class is full online, you will have the option of being placed on a Wait List. If space becomes available in a full class and you are accepted from the Wait List, you will be notified via the e-mail address you provided during registration. It is critical that you provide a working e-mail address in order to receive any communications or updates to your schedule.

## DRESS CODE

Dress code is comfortable and casual for the classroom.

## Week at a glance:

SUNDAY, OCTOBER 3 <sup>RD</sup> , 2021	
7 - 8:30 a.m	EVT Test & Event Registration   Breakfast
8:30 a.m.-12:30 p.m.	EVT Testing
12:00 p.m.	National Anthem (US & Canada), retired Chief Victor Hilbert, followed by lunch
1:00 p.m.	Classes
5:30 p.m. 6:00 p.m.	Dinner <b>Welcome:</b> Kent Tyler - President, REV Fire Group <b>Keynote:</b> “Failure is not an option on my watch.” <i>Retired engineer Norris “TJ” Tennenet, the Tyre Guy</i>
MONDAY, OCTOBER 4 <sup>TH</sup> , 2021	
7-8:30 a.m.	Event Registration   Breakfast
8:30 a.m.	Classes
12:00 p.m.	Lunch
5:30 p.m.	Awards Dinner
6:00 p.m.	<b>Spartan Proud:</b> Vice President & GM Spartan Fire Chassis <b>Goals of a Technician:</b> <i>2020 EVT Tech of the Year Capt Jerrett Hill Rattle Snake FPD, Parker, CO</i> Kevin Roberts President EVT CC
TUESDAY, OCTOBER 5 <sup>TH</sup> , 2021	
7-8:30 a.m.	Breakfast
8:30 a.m.	Classes
12:00 p.m.	Lunch
5:00 p.m.	Spartan Chassis Plant Tour with BBQ Dinner at Factory (Buses leave Lansing CTR @ 5pm sharp)
WEDNESDAY, OCTOBER 6 <sup>TH</sup> , 2021	
7-8:30 a.m.	Breakfast
8:30 a.m.	Classes
12:00 p.m.	Lunch
5:30 p.m. 6:00 p.m.	Dinner <b>REV Vehicles for Life:</b> Mike Virnig, Vice President of Sales, REV Fire Group Roundtable Q&A Panel: Micah Hankins, Randy Hoyt, Josh Ryan, John Merrifield, Jeff Seal
THURSDAY, OCTOBER 7 <sup>TH</sup> , 2021	
7-8:30 a.m.	Breakfast
8:30 a.m.	Classes
12:00 p.m.	Lunch
5:30 p.m.	Dinner
FRIDAY, OCTOBER 8 <sup>TH</sup> , 2021	
7-8:30 a.m.	EVT Test Registration   Breakfast
8:30 a.m.-12:30 p.m.	EVT Testing

*\* Please note that Tuesday’s dinner will take place off-site.*

*\* Agenda subject to change.*

## SUPPLIER EXHIBITS

Supplier partner exhibits will be open in Hall A at 11:30 a.m. on Sunday, October 3<sup>rd</sup> and during all breaks to allow you the opportunity to see what is new within your industry. Supplier exhibits will be open until 8:00 p.m. on Monday, October 3<sup>rd</sup>. (Exhibits may remain up until October 7<sup>th</sup>, but are not required.)

*If you have any questions, please feel free to contact Bill Foster at 517.588.4718 or Ashlei Timmermans at 605.480.1334 or via email at [fttc@spartanmotors.com](mailto:fttc@spartanmotors.com)*

## CONFERENCE REGISTRATION - LANSING CENTER

7:00 a.m. to 5:30 p.m. on Sunday, October 3<sup>rd</sup>, and 7:00 a.m. to 8:30 a.m. on Monday, October 4<sup>th</sup> in Hall A.

## TRANSPORTATION

If you are flying into Lansing Airport, there is a shuttle to and from the Radisson Hotel by phone request at the bag pick-up area for Radisson customers.

## TAXI CAB COMPANIES

The following Taxi Companies are available in the greater Lansing area.

**Kash Cab | 517.402.2515**

**Omega Express | 517.706.7992**

**S Cabs | 517.374.5500**

**Big Daddy Taxi | 517.367.7474**

Uber and Lyft are also available through their respective apps, available for download on the App Store and Google Play.

## PARKING INFORMATION

If you drive to the conference, you have the option of city ramp parking at the hotel (please contact the Radisson hotel for current rates) or in the city parking lots at \$15 per day. There will also be some parking below the Lansing Center for \$10 per day. All rates are subject to change. All hotels in Delta Township offer free parking.

## Hotel reservation information

Spartan does not have a block of rooms at any hotel. All rooms must be booked directly with the hotel of your choice Saturday, October 2nd through Friday, October 8th, 2021.

**Radisson Hotel | 517.482.0188**  
**West of the river by the Lansing Center**  
111 North Grand Ave.  
Lansing, MI 48933

**Marriott Courtyard Downtown | 517.367.6677**  
**East of the Lansing Center (2 blocks)**  
600 E Michigan Ave.  
Lansing, MI 48912

## ADDITIONAL HOTELS WEST 6.5 MILES

Additional hotels are located West Side off of 196 and M43 Saginaw St. Lansing MI 48917, Delta Township.

**Country Inn & Suites by Carlson | 517.827.7000**  
6511 Centurion Dr.  
Lansing, MI 48917

**Comfort Inn | 517.627.8381**  
525 N Canal Rd.  
Lansing, MI 48917

**Crown Plaza | 517.323.7100**  
925 S Creyts Rd.  
Lansing, MI 48917

**Hilton Hampton Inn | 517.999.7900**  
900 N. Canal  
Lansing, MI 48917

**Hilton Garden Inn | 517.999.9930**  
633. N.Canal  
Lansing, MI 48917

**Marriott Residence Inn | 517.886.5030**  
922 Delta Commerce Dr.  
Lansing, MI 48917

**Marriott Fairfield Inn | 517.886.1066**  
810 Delta Commerce Dr.  
Lansing, MI 48917

**Quality Suites | 517.886.0600**  
901 Delta Commerce Dr.  
Lansing, MI 48917

**Ramada of Lansing | 517.627.3211**  
7501 W. Saginaw  
Lansing, MI 48917


**SpringHill Suites | 517.627.0002**  
111 S Marketplace Blvd  
Lansing, MI 48917



# CLASS DESCRIPTIONS

Spartan is pleased to include the following educational classes, many of which are hands-on, during the 2021 Fire Truck Training Conference. Classes are broken down into three different tracs, making it easier for participants to select the class most suitable for their educational desire. Please consider these trac definitions when making class selections:

- **TRAC 1** - Designed for individuals such as the Operator, Engineer, or Equipment Officers that want to learn basic operation and maintenance at an introductory level.
- **TRAC 2** - Designed for Maintenance Technicians or people at the service repair level. Some classes are hands-on.
- **TRAC 3** - Designed for Heavy Repair Technicians who are interested in receiving hands-on, in-depth, technical training.

 This is a mandatory class for service centers to work on Spartan chassis.

## TRAC 1 Classes

### ● CAB SAFETY INSPECTIONS

Class covers cab door adjustments, hinge wear, latch position, lock rods, latch rods, nader pin adjustments, seat belt inspections, seat sensors, door weather seals and mounts for loose items, and even SCBAs found in cabs.  
*Presented by Micah Hankins of Spartan Emergency Response Engineering. 3 hours. Limited to 30. Offered three times.*

### ● CLASS 1 PRESSURE GOVERNORS

Class covers several Class 1 products including Captain, Total Pressure Governor, Vernier Throttle Systems and Tank Level Gauges. Students will receive a copy of the diagnostic video and troubleshooting guides.  
*Presented by Bill Young of Class 1/Hale Products Inc. 3 hours. Limited to 40. Offered three times.*

### ● COOLING SYSTEMS

Class covers types of coolants; SCA factors, test strips, filtration types, heat rejection, water problems, fuel coolers, charge air, fan clutches and retarders.  
*Presented by Dale Eddy of Cummins Sales & Service. 3 hours. Limited to 40. Offered three times.*

### ● CUMMINS ENGINE MAINTENANCE

Class covers caring for your diesel engine through oil analysis, lube oil, fuel and air filtration. Maintaining your EGR (exhaust gas re-circulation), VGT (Variable Geometry Turbo), DPF (Diesel Particulate Filter), SCR (Selective Catalytic Reduction), and DEF (Diesel Exhaust Fluid) systems. Standard and extended warranty coverage information.  
*Presented by Dale Eddy of Cummins Sales & Service. 3 hours. Limited to 30. Offered three times.*

### ● DRIVER OPERATOR INSPECTION ONE EVT DO1

Class covers NFPA 1911 inspection requirements of all drivers of fire apparatus and study guide for EVT DO1.  
*Presented by Alan Conkle, Executive Director of OAEVT. 12 hours. Limited to 40. Offered once.*

### ● FRC PRESSURE GOVERNORS

Class covers several products including Governors, Flowmeters, Tank Level Gauges, and Vernier Throttle Systems.  
*Presented by Will Turcios of Fire Research Corporation. 3 hours. Limited to 40. Offered three times.*

### ● INTRODUCTION TO IDEX FSG MULTIPLEXING

Class covers identifying multiplexed systems by components and software, power & grounding in theory and practice, how to read input/output reports, working with CAN/J1939 networks on the modern vehicle, vehicle data recorders, basic downloader, and diagnostics. Students that need

software installation should bring their Windows based laptops to the session.  
*Presented by Jeff Dilgren of IDEX Fire Suppression Group. 3 hours. Limited to 30. Offered six times.*

### ● LUBRICANTS FOR EMERGENCY VEHICLES

This class covers selecting the correct lubricants for engines, transmissions, axles, hydraulic fluid applications (steering to aerials), and coolants. As well as industry changes (introduction of EV), the proper change cycles, mineral vs synthetic, and grease.  
*Presented by Joe Bruzda of Valvoline. 3 hours. Limited to 40. Offered four times.*

### ● MAINTENANCE, INSPECTION AND TESTING EVT EO


Class covers the EVT study guide for EVT EO review.  
*Presented by Kevin Roberts of Roberts Repair Inc. 3 hours. Limited to 40. Offered once.*

### ● RUST & CORROSION

Class covers how an end user can protect the fire department’s investment from rust and electrolysis created by dissimilar metals or road chemicals creating corrosion, rust jacking, and many forms of compromised components in fire vocational long life objectives.  
*Presented by Bob Lawrie of Pro Fleet Care. 90 minutes. Limited to 40. Offered four times.*

### ● SAFETY LIGHTING


Class covers science of effective scene lighting and upgrading older equipment, how to get longer life from lamps, and cut maintenance cost. Make scenes safer and maximize the lightning.  
*Presented by Sam Massa of Fire Tech. 90 minutes. Limited to 30. Offered three times.*


- **STARTING, CHARGING DIAGNOSTICS & BATTERY TECHNOLOGY**   
Class covers two stage cranking motors, alternator maintenance, modern battery technology, and testing connections.  
*Presented by James Moeller, of C.E. Niehoff & Co. and Marion Jett, of Leece-Neville. 3 hours. Limited to 30. Offered twice.*


## TRAC 2 Classes


### ● ADVANCED ELECTRICAL SYSTEMS EVT - F4A


This course is designed to help prepare the technician in taking the EVT F4A certification exam. The class material will review the basic principals of electricity, operation, use of diagnostic equipment, batteries, charging systems, and starting systems for the fire apparatus and general maintenance and servicing.  
*Presented by Dan Copen, an E-ONE Trainer. 6 hours. Limited to 30. Offered once.*

- **AERIAL OPERATIONS**   
Class covers running aerial and operation outdoors; of recognizing faults cable inspections and adjustments; and service requirements.  
*Presented by Chris Long of Spartan LTC. 3 hours. Limited to 12. Offered three times.*

- **AERIAL FIRE APPARATUS EVT F5**   
Class covers EVT study guide for F5. Covers all aerial inspection NFPA 1901 & 1911 and structural inspection.  
*Presented by Chris Long of LTC. 9 hours. Limited to 25. Offered twice.*

- **AIR BAG PROTECTION, ROLL-TEK & APS**   
Class covers component locations and cab sensor locations for control. Troubleshooting program functions do’s and don’ts, Information on pyrotechnic modules and belt retractors, deployment reaction protocol, fuse location, and deployment areas to be kept clear.  
*Presented by John Merrifield, A Spartan Technical Trainer. 3 hours. Limited to 40. Offered twice.*

- **AIR CONDITIONING MAINTENANCE**   
Class covers the working components of air conditioners, diagnosing failure cause and repair, testing, and pressures.  
*Presented by John Merrifield, a Spartan Technical Trainer. 3 hours. Limited to 44. Offered twice.*

- **AIR SYSTEMS/BRAKES/ESC**   
Class covers ABS/ATC/RSC/ESC air compressor, air dryer, governor, parking, service brake valves, and chambers. Hands-on class covering troubleshooting ABS, ATC and RSC codes from yaw sensor, steer angle sensor, lateral accelerometer, ECU, and brake valves. ESC fault code troubleshooting and inspection of related components.  
*Presented by Charles Brodie and Todd Charles of Wabco. 6 hours. Limited to 30. Offered twice.*

- **AKRON VALVES & NOZZLES REBUILD**  
Tear down and rebuild swing out valves, nozzles and discuss electric monitor repair.  
*Presented by Jeff Benson & Justin Yoder of Akron Brass. 3 hours. Limited to 30. Offered twice.*

- **ALLISON AUTOMATIC TRANSMISSION EVT F6**  
Class covers EVT study guide for F6.  
*Presented by Dan Cleveland of Cleveland Consulting. 12 hours. Limited to 44. Offered once.*

- **ALLISON TRANSMISSION MAINTENANCE**  
Class covers “Service Support for the Allison Transmission.” This session will begin with a brief overview of the World Transmission and Gen 5 followed by a hands-on chassis tour covering physical and electronic transmission-to-chassis interface, oil filter change procedure, and utilization of the Allison oil level sensor. Additionally, the presentation will cover

troubleshooting code extraction utilizing both the shift selector and diagnostic DOC tool. Code cards, service prognostics, and mechanic tips booklet provided.

*Presented by Don Sanson and Todd Dawn of Allison Transmission.  
6 hours. Limited to 25. Offered three times.*

● **AMBULANCE & FIRE APPARATUS ELECTRICAL SYSTEMS EVT E2 & F4**

Class covers EVT study guide for EVT E2 and F4.

*Presented by Dan Copen, an E-ONE Trainer.  
6 hours. Limited to 40. Offered once.*

● **AMBULANCE DESIGN & PERFORMANCE EVT E1**

Class covers EVT study guide for E1. NFPA 1917 standards will be reviewed. Proper electrical loads, payload calculation, weight distribution, heating, A/C and, oxygen requirements.

*Presented by Terry Eckert of Eckert Enterprises.  
6 hours. Limited to 40. Offered once.*

● **APPARATUS ELECTRICAL THEORY**

Class covers amps, ohms, volts, electrical principals and meter functions. **Bring your volt-meter.**

*Presented by Dan Copen, an E-ONE Trainer.  
3 hours. Limited to 30. Offered three times.*

● **BATTERY CONDITIONERS & AIR PUMPS**

Class covers hands on maintenance & troubleshooting auto chargers, auto eject, air pumps, and solar panels.

*Presented by Danny Graham of Kussmaul Electronics.  
3 hours. Limited to 40. Offered three times.*

● **BELTS, HOSES AND COOLING SYSTEM**

Class covers what is EPDM and the changes in the rubber compound of hose products used in fuels and coolants. Each tech will receive a poly belt wear tester. Coolant effects on water pumps and why 95% of water pumps fail due to not flushing the coolant, the root cause of 40% of radiator failure. Free tools drawn from class participants for a Gates Laser Alignment Tool and a Power Clean Flush Tool.

*Presented by Franklin Woodson of Gates.  
3 hours. Limited to 40. Offered three times.*

● **BRAKES DISC/DRUM & ASA INSPECTION**

Class covers the hands-on diagnosis, repair and operation of Automatic Slack Adjusters (ASA) to Commercial Vehicle Safety Alliance (CVSA). Inspection criteria will also be discussed.

*Presented by Vaughn Holdsworth & Matt Long of Meritor.  
6 hours. Limited to 30. Offered twice.*

● **DATA LINK DIAGNOSTICS/ELECTRICAL ACCESSORY INSTALLATION**

Class covers SAE J1587 and SAE J1939 protocol, multiplex gauges, high idle, DEF light operation, pressure governor, extracting fault codes for engine and ABS from LCD screen. Electrical (communication) options & accessory installs, provide noise filtering, grounding locations, shielding and canceling, battery

wiring clean and dirty connections. Discussion on the new J1939 OBD HD green connector will be covered.

*Presented by Dan Copen, an E-ONE Trainer.  
3 hours. Limited to 44. Offered twice.*

● **FIRE APPARATUS DESIGN & PERFORMANCE EVT F2**

Class covers EVT class study guide for F2.

*Presented by Terry Eckert of Eckert Enterprises.  
9 hours. Limited to 44. Offered twice.*

● **FIRE PUMPS & ACCESSORIES EVT F3**

Class covers EVT study guide for F3.

*Presented by Jay Rought of Waterous.  
6 hours. Limited to 40. Offered twice.*

● **FOAM & CAFS EVT F7**

Class covers EVT study guide for F7 CAFS delivery system including troubleshooting and repair of foam metering, and compressed air foam systems.

*Presented by Chuck Small of Foam Pro.  
and Jay Rought of Waterous.  
9 hours. Limited to 40. Offered once.*

● **HARRISON HYDRA-GEN**

Class covers the Installation, Troubleshooting and Maintenance of Harrison Hydraulic Generators. The goal of the class is that all students will have a complete understanding of what each part does, how it is installed and how it is removed for any service work that will be required. This will be a very informal power point presentation prompting open discussion with an actual cutaway generator and hydraulic pump in the classroom for hands on work. Real life power systems troubleshooting will be spread throughout the presentation. Generator retrofit and factory service processes will be reviewed. Harrison Hydra-Gen IHT systems will be discussed as they are used to drive rescue tools, water pumps, winches, A/C systems, etc. An overview of the Harrison 10k200 auxiliary power unit and Harrison hPower idle reduction technology will be given. Each student will receive a certificate of completion at the end of the class.

*Presented by Troy Padgett.  
3 hours. Limited to 40. Offered three times.*

● **HVAC EVT E3**

Class covers EVT study guide for E3 review.

*Presented by Kevin Roberts of Roberts Repair Inc.  
6 hours. Limited to 40. Offered once.*

● **HYDRAULIC SYSTEMS EVT F8**

Class covers goals and objectives EVT study guide for F8 hydraulic theory, understanding hydraulic system components and their functions and circuits.

*Presented by John Hart of DTS Fluid Power LLC.  
6 hours. Limited to 40. Offered twice.*

● **MAINTENANCE, INSPECTION & TESTING EVT F1**

Class covers study guide for F1 inspection. 1911 chapter 6 out of service, Chapter 7, inspection of cab and chassis with

hands-on steering, brake inspection, and frame inspection for rust proofing to prevent rust jacking.

*Presented by Gary May, a Retired Spartan Tech Advisor..  
NOTE: refer to CAFS, pump and aerial for their inspection and out of service criteria. 12 hours. Limited to 50. Offered once.*

● **ONAN HYDRAULIC GENERATORS**

Class covers Onan hydraulic generators, components trouble shooting; Onan protec PTO generators; plus gasoline; diesel products, filters and cooling.

*Presented by Eric Bollensen of Cummins Onan.  
90 minutes. Limited to 44. Offered three times.*

● **ROLL-UP DOORS**

Class covers troubleshooting installations, alignments and adjustment, tear down, lubrication, and diagnostic of door ajar and light switches.

*Presented by Terry Bay of R.O.M. Corporation.  
3 hours. Limited to 30. Offered three times.*

● **SKF LUBRICATION SYSTEMS/ONSPOT CHAINS**

Class covers grease, pump, distribution system meters lines, and different types of timing clocks. Presented by Frank Casinelli of SKF Lubrication. OnSpot Chains discusses the installation, set-up, and maintenance.

*Presented by Quinten Tritle of OnSpot.  
90 minutes. Limited to 44. Offered twice.*

● **STEERING & SUSPENSION**

Class covers steering pump, reservoir filters, fluid pressure, flow, setting poppets, reading suspension alignment, and handling issues.

*Presented by Gary May, a Retired Spartan Tech Advisor.  
3 hours. Limited to 44. Offered once.*

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## TRAC 3 Classes

● **CUMMINS ELECTRONICS TROUBLESHOOTING**

Class covers current product updates, troubleshooting fault codes and symptoms, familiarization through hands-on troubleshooting with Cummins Insite, Guidanz, and Quickcheck service tools. Engine integration to DPF, Doser, SCR, Regen and Multiplexing, engine integration with pressure governor management, and updates.

*Presented by Dale Eddy of Cummins Sales & Service.  
3 hours. Limited to 30. Offered three times.*

● **COMMAND LIGHT TROUBLESHOOTING**

Class covers all three models sensors, actuators and rotation motors using the handheld control lights as diagnostic devices.

*Presented by Kevin Schuessier of Command Light.  
90 minutes. Limited to 44. Offered twice.*

● **DARLEY PUMP REBUILD**

Hands-on repair and maintenance of Darley LDM pump with primer, relief valve, ball valve and drain valve design and operation troubleshooting are covered.

*Presented by James Jones of W.S. Darley.  
6 hours. Limited to 15. Offered once.*

● **DRIVE TRAIN**

Class covers drive angle studies for pump and carrier bearings, axle bearings, wheel bearings, and pinion angles on “Hands On” Simulator.

*Presented by John Merrifield, a Spartan Technical Trainer.  
3 hours. Limited to 40. Offered twice.*

● **MULTIPLEXING NODE TROUBLESHOOTING**

Class covers the advanced multiplex troubleshooting process, input and output signals between multiple nodes in network, how to use jumpers wires to verify proper operation, and continuity. Using diagnostic software within the full system.

*Presented by Markus Kelley of IDEX Fire Suppression Group.  
3 hours. Limited to 15. Offered six times.*

● **TIRES & HANDLING**

Class covers tire nomenclature, and everything you want to know about tires, loads vs. pressure, date of manufacture, tire application of treads and reading alignment treadwear emergency service effects, ride, sway/wander, tire and wheel mounting. Checking thrust and alignment, and hands-on effect of wear.

*Presented by TJ Tennent, The Tyre Guy.  
6 hours. Limited to 30. Offered three times.*

● **U.L. FIRE PUMP TEST**

Class covers pump certification test per NFPA 1901.

*Presented by Andrei Henegarn, Fred Wierenga, and Matt Holzhei of CSI.  
3 hours. Limited to 30. Offered once.*

● **WHEEL END MAINTENANCE**

Class covers tear down and rebuild of wheel end, failure analysis, component inspection, clean up procedures, lube fill procedure, bearing torque, installation of wear rings, and seals.

*Presented by Martin Wolf of Stemco.  
1.5 hours. Limited to 30. Offered four times.*

● **WILL-BURT LIGHT TROUBLE SHOOTING**

Class covers maintenance and troubleshooting of Night Scan PM and adjustments.

*Presented by Clint Derenberger of Will-Burt.  
90 minutes. Limited to 44. Offered twice.*



2021 CLASS SCHEDULE | CLASS START TIMES


		SUNDAY October 3			MONDAY October 4				TUESDAY October 5				WEDNESDAY October 6				THURSDAY October 7				FRIDAY October 8		
		8:30 AM–12:30 PM NO BREAKS		1:00 PM	3:00 PM	8:30 AM	10:30 AM	1:00 PM	3:00 PM	8:30 AM	10:30 AM	1:00 PM	3:00 PM	8:30 AM	10:30 AM	1:00 PM	3:00 PM	8:30 AM	10:30 AM	1:00 PM	3:00 PM	8:30AM–12:30 PM NO BREAKS	
FIRST FLOOR LOCATIONS	Hall A		Roll-Up Doors T. Bay		Darley Pump Rebuild J. Jones						Air Systems/Brakes/ESC C. Brodie & T. Charles		Allison Transmission Maintenance D. Sanson & T. Dawn										
	Hall A		Wheel End Maintenance M. Wolf	Wheel End Maintenance M. Wolf	Allison Transmission Maintenance D. Sanson & T. Dawn			Brake Disc Drum & ASA V. Holdsworth & M. Long			Allison Transmission Maintenance D. Sanson & T. Dawn			Brake Disc Drum & ASA V. Holdsworth & M. Long									
	Hall B	EVT Testing* Site ID #MILAN		Cooling Systems D. Eddy		Cummins Engine Maintenance D. Eddy		Cooling Systems D. Eddy		Cummins Electronic Troubleshooting D. Eddy		Cummins Engine Maintenance D. Eddy		Cummins Electronic Troubleshooting D. Eddy		Cooling Systems D. Eddy		Cummins Electronic Troubleshooting D. Eddy		Cummins Engine Maintenance D. Eddy		EVT Testing* Site ID #MILAN	
	Room 101		Fire Apparatus Design & Performance EVT F2 T. Eckert						Ambulance Design & Performance EVT E1 T. Eckert				Fire Apparatus Design & Performance EVT F2 T. Eckert						Cab Safety Inspections M. Hankins				
	Room 102		Battery Conditioners & Air Pumps D. Graham		Battery Conditioners & Air Pumps D. Graham		Battery Conditioners & Air Pumps D. Graham		Allison Transmission EVT F6 D. Cleveland						Tires & Handling TJ Tennent								
	Room 103		Hydraulic Systems EVT F8 J. Hart				Foam & CAFS EVTF7 C. Small & J. Rought						Air Conditioning Maintenance J. Merrifield		Air Conditioning Maintenance J. Merrifield		Hydraulic Systems EVT F8 J. Hart						
	Room 104		Akron Valves & Nozzles Rebuild J. Benson & J. Yoder		Aerial Fire Apparatus EVT F5 C. Long						Akron Valves & Nozzles Rebuild J. Benson & J. Yoder				Aerial Fire Apparatus EVT F5 C. Long				SKF Lubrication Systems F. Casinelli Onspotchains Q. Tritle	SKF Lubrication Systems F. Casinelli Onspotchains Q. Tritle			
	Banquet 5		Maintenance Inspection & Testing EVT EO K. Roberts		Tires & Handling TJ Tennent				Tires & Handling TJ Tennent				Fire Pumps & Accessories EVT F3 J. Rought				Fire Pumps & Accessories EVT F3 J. Rought						
	Banquet 7		Aerial Operations C. Long		Air Systems/Brakes/ESC G. Brodie & T. Charles				Drive Train J. Merrifield		Drive Train J. Merrifield		Advanced Electrical Systems EVT F4 A D. Copen				Air Bag Protection Roll TEK and APS J. Merrifield		Steering & Suspension G. May				
Banquet 8	Air Bag Protection Roll-TEK & APS J. Merrifield		Wheel End Maintenance M. Wolf	Wheel End Maintenance M. Wolf	Cab Safety Inspections M. Hankins		Harrison Hydra-Generators T. Padgett		Aerial Operations C. Long		HVAC EVT E3 K. Roberts				WILL-BURT Light Troubleshooting C. Derenberger	WILL-BURT Light Troubleshooting C. Derenberger	Roll-Up Doors T. Bay						
SECOND FLOOR LOCATIONS	Gov. Room		Onan Hydraulic Generators E. Bollensen	Onan Hydraulic Generators E. Bollensen	Onan Hydraulic Generators E. Bollensen	Safety Lighting S. Massa	Belts, Hoses & Cooling System F. Woodson		Class 1 Pressure Governors B. Young		Belts, Hoses & Cooling System F. Woodson		Belts, Hoses & Cooling System F. Woodson		Class 1 Pressure Governors B. Young		FRC Pressure Governor W. Turcios		Class 1 Pressure Governors B. Young				
	Room 201	Rust & Corrosion B. Lawire	Rust & Corrosion B. Lawire	Maintenance, Inspection & Testing EVT F1 G. May								Driver Operator Inspection EVT DO1 A. Conkle											
	Room 202	FRC Pressure Governor W. Turcios		FRC Pressure Governor W. Turcios		Roll-Up Doors T. Bay		Lubricants for Emergency Vehicles J. Bruzda		Lubricants for Emergency Vehicles J. Bruzda		Safety Lighting S. Massa	Rust & Corrosion B. Lawire	Safety Lighting S. Massa	Rust & Corrosion B. Lawire	Lubricants for Emergency Vehicle J. Bruzda		Lubricants for Emergency Vehicle J. Bruzda					
	Room 203	Harrison Hydra-Generators T. Padgett		Introduction to IDEX FSG Multiplexing J. Dilgren		Introduction to IDEX FSG Multiplexing J. Dilgren		Introduction to IDEX FSG Multiplexing J. Dilgren		Introduction to IDEX FSG Multiplexing J. Dilgren		Introduction to IDEX FSG Multiplexing J. Dilgren		Introduction to IDEX FSG Multiplexing J. Dilgren		Starting, Charging, Diagnostics & Battery Technology J. Moeller & M. Jett		Starting, Charging, Diagnostics & Battery Technology J. Moeller & M. Jett					
	Room 204	Cab Safety Inspections M. Hankins		Multiplexing Node Troubleshooting M. Kelley		Multiplexing Node Troubleshooting M. Kelley		Multiplexing Node Troubleshooting M. Kelley		Multiplexing Node Troubleshooting M. Kelley		Multiplexing Node Troubleshooting M. Kelley		Multiplexing Node Troubleshooting M. Kelley		Harrison Hydra-Generators T.Padgett		Aerial Operations C. Long					
	Room 205	Apparatus Electrical Theory D. Copen		Ambulance & Fire Apparatus Electrical Systems EVT E2 & F4 D. Copen				Apparatus Electrical Theory D. Copen		Data Link Diagnostics/ Electrical Accessory Installation D. Copen		U.L. Fire Pump Test A. Henegarn, F. Wierenga, M. Holzhei		Command Light Troubleshooting K. Schuessler	Command Light Troubleshooting K. Schuessler	Apparatus Electrical Theory D. Copen		Data Link Diagnostics/ Electrical Accessory Installation D. Copen					

- Trac 1

Designed for individuals such as the Operator, Engineer or Equipment Officers that want to learn basic operation and maintenance at an introductory level.
- Trac 2

Designed for the Maintenance Technicians or people at the service repair level. Some classes are hands-on.
- Trac 3

Designed for the Heavy Repair Technicians who are interested in receiving hands-on, in-depth, technical training.

 This is a mandatory class for service centers to work on Spartan chassis

\*EVT Testing | Download form at [evtcc.org](http://evtcc.org)

EVT Certification Commission, Inc. Exam Registration / EVT Invoice

Have you ever registered for an EVT Certification exam before? Yes No

XXX- XX - Last 4 Digits of Social Security # cell or home phone Work Phone

Last Name First Name MI

Mailing Address

City State Zip or Postal Code

Email address: Confirmation will be emailed within 3 business days Date of Birth - -

Employer Name: Sex: Male Female Education: yrs

DATE OF EXAM: Sunday, October 3, 2021 21 Day Advance Registration Required TEST SITE# MILAN Lansing Center Lansing, MI To register online go to www.evtcc.org

Blacken the square for exam- a maximum of 2 regular exams or 6 re-certification exams or a combo of 1 reg & 3 recerts may be taken.

\*Note: Re-certification exams are for technicians whose certification is expiring.

Regular	Re-certification*		EVT Certification reserves the right to affirm to interested parties the areas in which a technician is EVT Certified.
\$60.00	\$35.00	Fire Apparatus Exams	
F1		F-1 Maintenance, Inspection, & Testing	Fees: Number of:
F2		F-2 Design & Performance	Regular exams: X \$60.00 = \$
F3		F-3 Fire Pumps & Accessories	
F4		F-4 Electrical Systems	Re-certification exams: X \$35.00 = \$
FA4		FA-4 Advanced Electrical Systems to certify in FA-4 you must certify in F4 or E2	
F5		F-5 Aerial Fire Apparatus	Total Amount Due = \$
F6		F-6 Allison Automatic Transmission	Payment by check credit card
F7		F-7 Foam Systems	Credit Card #
F8		F-8 Hydraulic Systems	
GL		GL Ground Ladder Testing	Expiration Date
DO1		DO1 Driver Operator Inspection	Cardholder Name
		Ambulance Exams	
E0		E-0 Maintenance, Inspection & Testing	
E1		E-1 Design & Performance	Cardholder address and postal code-if different from applicant
E2		E-2 Electrical Systems	Cardholder email
E3		E-3 HVAC	
E4		E-4 Cab, Chassis & Powertrain	Signature of cardholder:
		Airport Rescue & Firefighting Vehicle Exams	
A1		A-1 Design & Performance	You will receive a Confirmation Letter and Reference/Objective list within three business days by email.
A2		A-2 Chassis & Components	You must have the confirmation letter to be admitted to the exam, along with PICTURE ID.
A3		A-3 Extinguishment Systems	
L1		L-1 Law Enforcement Vehicle Installation	
M1		M-1 Management Level I Supervisor	
M2		M-2 Management Level II Supervisor to certify in M-2 you must certify in M1	

REGISTER ON-LINE at www.evtcc.org

EVT Certification Commission, Inc. Exam Registration / EVT Invoice

Have you ever registered for an EVT Certification exam before? Yes No

XXX- XX - Last 4 Digits of Social Security # cell or home phone Work Phone

Last Name First Name MI

Mailing Address

City State Zip or Postal Code

Email address: Confirmation will be emailed within 3 business days Date of Birth - -

Employer Name: Sex: Male Female Education: yrs

DATE OF EXAM: Friday, October 8, 2021 21 Day Advance Registration Required TEST SITE# MILAN Lansing Center Lansing, MI To register online go to www.evtcc.org

Blacken the square for exam- a maximum of 2 regular exams or 6 re-certification exams or a combo of 1 reg & 3 recerts may be taken.

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F1		F-1 Maintenance, Inspection, & Testing	Fees: Number of:
F2		F-2 Design & Performance	Regular exams: X \$60.00 = \$
F3		F-3 Fire Pumps & Accessories	
F4		F-4 Electrical Systems	Re-certification exams: X \$35.00 = \$
FA4		FA-4 Advanced Electrical Systems to certify in FA-4 you must certify in F4 or E2	
F5		F-5 Aerial Fire Apparatus	Total Amount Due = \$
F6		F-6 Allison Automatic Transmission	Payment by check credit card
F7		F-7 Foam Systems	Credit Card #
F8		F-8 Hydraulic Systems	
GL		GL Ground Ladder Testing	Expiration Date
DO1		DO1 Driver Operator Inspection	Cardholder Name
		Ambulance Exams	
E0		E-0 Maintenance, Inspection & Testing	
E1		E-1 Design & Performance	Cardholder address and postal code-if different from applicant
E2		E-2 Electrical Systems	Cardholder email
E3		E-3 HVAC	
E4		E-4 Cab, Chassis & Powertrain	Signature of cardholder:
		Airport Rescue & Firefighting Vehicle Exams	
A1		A-1 Design & Performance	You will receive a Confirmation Letter and Reference/Objective list within three business days by email.
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M1		M-1 Management Level I Supervisor	
M2		M-2 Management Level II Supervisor to certify in M-2 you must certify in M1	

REGISTER ON-LINE at www.evtcc.org



RE✓ GROUP

FTTC

**FTTC@spartanmotors.com**

**Registration will be available starting June 2021 at:**  
[spartaner.com/FTTC2021](http://spartaner.com/FTTC2021)

Phone: 517.588.4700 Fax: 517.588.4724  
After Market Product Support: 800.867.6478

