<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACDelco/WTI</td>
<td><strong>GM - Diagnosing Multiplexed Data Bus Networks</strong></td>
<td>Lee Hammler</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td>Diagnosing Complex Network System Failures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Network Protocols: CAN, LIN, GMLAN, MOST®, and Repair Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus on Diagnostic Strategies to Hone Problem Solving Skills for Serial Data</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Failure Modes in Multiplex Networks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACDelco/WTI</td>
<td><strong>GM - EVAP Diagnosis</strong></td>
<td>Jerry Mungle</td>
<td>305</td>
</tr>
<tr>
<td></td>
<td>Overview of Evaporative Emissions and System Controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Tank Ventilation System, Charcoal Canister, Purge and Vent Valves, Fuel</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tank Pressure Sensors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leak Detection Pump (LDP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strategies and Function of Onboard Refueling Vapor Recovery (ORVR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Off Natural Vacuum (EONV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnosis of P0440, P0442 and Other EVAP System DTCs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACDelco/WTI</td>
<td><strong>GM - Diesel Emissions and Exhaust Aftertreatment</strong></td>
<td>Lee Hammler</td>
<td>205</td>
</tr>
<tr>
<td></td>
<td>Emission Systems and Components Found on Modern Diesel Powered Vehicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operation of Fuel Injection, Glow Plugs, Intake Air Heaters (IAH), Intake Swirl Valves, and Exhaust Gas Recirculation (EGR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Oxidation Catalyst (DOC), Diesel Particulate Filter (DPF), Nitrogen Oxides Adsorbing Catalyst (NAC), NOx Storage Catalyst (NSC), Selective Catalytic Reduction (SCR), and Diesel Exhaust Fluid (DEF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnostic Strategies, Known Malfunctions, Real-World Case Studies, and Diagnostic Exercises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACDelco/WTI</td>
<td><strong>GM - Refrigeration Diagnostics and Service Procedures</strong></td>
<td>Jerry Mungle</td>
<td>405</td>
</tr>
<tr>
<td></td>
<td>Designed for technicians with prior understanding of the refrigerant cycle and system operation, this seminar will provide technicians with techniques and strategies required to isolate the root cause and perform repairs of failures in R-134a and R-1234yf equipped Air Conditioning (AC) systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure-temperature and humidity readings as a diagnostic aide will be the foundation of the course</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specific component diagnosis includes variable displacement compressors, electrically driven compressors, expansion valves, Internal Heat Exchangers (IHX), enhanced evaporators and condensers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simulated diagnostic exercises to apply the principles learned</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACDelco/WTI</td>
<td>GM - HVAC Controls and Diagnostic Techniques</td>
<td>Jerry Mungle</td>
<td>503</td>
</tr>
<tr>
<td></td>
<td>Diagnostic techniques and strategies required to diagnose non-refrigerant related issues with the HVAC electronic controls that impact electronically regulated compressor operation and the air delivery system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HVAC control inputs, condenser and blower motor fan controls and operation, manual, electronic and automatic temperature control and electronic mode door actuators and their control of air delivery and airflow in single and multiple zone adjustable systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setup procedures for all related modules</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simulated diagnostic exercises to apply the principles learned</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denso/WTI</td>
<td>GM - Air Induction &amp; Emissions Systems</td>
<td>Gary Machiros</td>
<td>201</td>
</tr>
<tr>
<td></td>
<td>Current systems that you're seeing in the shop today</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evolving OEM Scan Tool Options - and the confusing limitations of each</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GM's 8-wire MAF sensor with humidity &amp; BARO signals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Help for ETC throttle relearn nightmares</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drive-By-Wire (ECT) systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gen IV V8 Active Fuel Management (cylinder kill) noises &amp; failures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variable Camshaft Timing (VCT) faults - oil, actuator, solenoid or chain?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All EVAP &amp; EGR systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Great Catalyst diagnostic procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motorcraft/WTI</td>
<td>Ford - Ecoboost Direct Injection Turbocharged Engine Operation, Diagnosis &amp; Service</td>
<td>TBD</td>
<td>203</td>
</tr>
<tr>
<td></td>
<td>Overview of Direct Injection Turbocharged (DIT) “Ecoboost” Engines, including the 3.5L, 2.0L, 1.5L, 1.5L, and 1.0L versions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIT Fuel Systems Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIT Service Procedures, Including Injector Replacement Methods and Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GTDI Turbocharging Systems Operation, Diagnosis, and Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operation of Speed Density Air Inlet System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operation and Diagnosis of a Universal Exhaust Gas Oxygen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic Component Symptoms and Diagnostic Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motorcraft/WTI</td>
<td>Ford - Interactive Diagnostic Software (IDS) Scantool Operation, Navigation, and Use with VCM II</td>
<td>TBD</td>
<td>406</td>
</tr>
<tr>
<td></td>
<td>IDS Vehicle Operation, Components and Preferences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self Tests procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Datalogger and PIDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Recording and Playback</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Module Configuration and Programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Module Replacement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using System Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interactive Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Signal Generator Monitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oscilloscope Functionality</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorcraft/WTI</td>
<td><strong>Ford - Drivability Systems and Diagnosis</strong></td>
<td>TBD</td>
<td>501</td>
</tr>
<tr>
<td></td>
<td>Identify the source of a drivability concern and correct it effectively and efficiently.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Misfire Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lean Engine Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PCM Adaptive Strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Input and Output Component Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Phasing and Testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scan Tool Utilization for Drivability</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronics Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intermittent Diagnostic Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motorcraft/WTI</td>
<td><strong>Ford - Hybrid and Electric Vehicle Operation</strong></td>
<td>TBD</td>
<td>303</td>
</tr>
<tr>
<td></td>
<td>Overview of Focus Electric Vehicle Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driving a Ford High Voltage Vehicle Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Voltage Vehicle Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regenerative Braking Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hybrid Gasoline Engine Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hybrid Drivetrain Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus EV Powertrain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Voltage Electrical System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low Voltage (LV) Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regenerative Braking System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Climate Control System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motorcraft/WTI</td>
<td><strong>Ford - 6.4L Diesel - Operation and Diagnostics</strong></td>
<td>TBD</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>Most 6.4L diesel seminars focused on system operation, this seminar provides in-depth diagnostic methods for this engine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Preliminary Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hard Start/No Start Tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DPF Testing and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Performance Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additional Tests</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes

REV 3/14 B
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorcraft/WTI</td>
<td><strong>Ford - 6.7L Diesel - Operation and Diagnostics</strong></td>
<td>TBD</td>
<td>402</td>
</tr>
<tr>
<td></td>
<td>Since its introduction in 2010, the Ford 6.7L diesel has become one of the most popular diesel engines in history. This seminar focuses on updating Service Technicians with the knowledge to service these engines. Fuel and Lubricants Engine Components and Specifications Air inlet and Turbocharger EGR System Operation Diesel Particulate Filter (DPF) Operation Selective Catalyst Reduction (SCR) Operation Low Pressure Fuel System High Pressure Fuel System Electronic Engine Controls Cooling Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denso/WTI</td>
<td><strong>Ford Hybrid Diagnostics</strong></td>
<td>Dean Parsons</td>
<td>401</td>
</tr>
<tr>
<td></td>
<td>Built from the common failures occurring in Ford hybrid models, applying directly to the diagnostic, repair, and normal service challenges you’ll be seeing in your shop Confidently diagnose the main hybrid drive components: batteries, inverters and transaxles Identifying module responsibility by model (PCM, TCM, TBCM, BECM, BPSM &amp; BEC) Disabling, interlock circuits, inertia switches, and other power-up/power-down information Traction battery air &amp; HVAC cooling systems Transaxle Cooling and Controls (MECS) Electro-Hydraulic Braking Systems Electric Power Steering &amp; HVAC Compressors Hybrid Drive Diagnostics, Including High Voltage Isolation Faults, Battery Performance, Transaxle Performance, Battery Cooling, and Transaxle Cooling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denso/WTI</td>
<td><strong>Ford - Air Management &amp; Emmisions Systems</strong></td>
<td>Gary Machiros</td>
<td>101</td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denso/WTI</td>
<td><strong>Ford - Powerstroke Diesel (6.0L)</strong>&lt;br&gt;Field-tested diagnostics &amp; repair strategies that actually work&lt;br&gt;6.0L Powerstroke engines are known for two things: 1-Trouble codes that DO NOT directly point to the fault 2-Unpredictable interactions between components that make it difficult to even determine which system is the source of the fault&lt;br&gt;Hidden secondary faults and root causes that result in unplanned repairs&lt;br&gt;Mechanical issues, including lifters, cylinder heads, &amp; common leaks&lt;br&gt;Low &amp; High pressure oil systems, including shortcuts to quickly differentiate between oil faults, high pressure leaks, injector control issues, and many other causes of the most common complaints: No-starts &amp; hard-starts.&lt;br&gt;The complex relationships between turbo controls and EGR systems&lt;br&gt;The best ways to find restrictions &amp; leaks</td>
<td>Rick Kelly</td>
<td>202</td>
</tr>
<tr>
<td>Denso/WTI</td>
<td><strong>Ford - Powerstroke Diesel (6.4L &amp; 6.7L)</strong>&lt;br&gt;Real world diagnosis &amp; repair of a wide variety of engine management, emissions, and trouble code faults. Pictures, Scan Tool captures, Lab Scope waveforms and much more from simple tests to full teardowns.&lt;br&gt;Mechanical issues &amp; repair techniques&lt;br&gt;High &amp; low pressure fuel systems&lt;br&gt;Oil &amp; fuel injection control &amp; issues&lt;br&gt;Series/sequential turbocharger service &amp; diagnosis (6.4L)&lt;br&gt;Single sequential (DualBoost) turbocharger systems &amp; controls (6.7)&lt;br&gt;EGR flow &amp; function diagnostics&lt;br&gt;The best ways to find restrictions &amp; leaks&lt;br&gt;Diesel Oxidation Cats &amp; Diesel Particulate Filters&lt;br&gt;Selective Reduction Catalysts (SCR) (6.7L) Overview</td>
<td>Rick Kelly</td>
<td>302</td>
</tr>
<tr>
<td>CTI</td>
<td><strong>Ford - EcoBoost Operation and Data Analysis</strong>&lt;br&gt;Displacements from 1.0 liter to 3.5 liter, Ford expects this engine family to be an option for up to 90% of their vehicles&lt;br&gt;The operation and diagnostic techniques technicians will need to service this massive segment of the repair market.&lt;br&gt;Engine mechanical highlights&lt;br&gt;Fuel system operation and diagnosis&lt;br&gt;Ignition system operation and diagnosis&lt;br&gt;Air Induction and turbocharging - Components and Operation&lt;br&gt;Emission components and monitoring strategies&lt;br&gt;Network configuration and reprogramming&lt;br&gt;Current Service Issues and Fixes</td>
<td>Randy Briggs</td>
<td>103</td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------------------------------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Mopar/WTI</td>
<td>Chrysler - Diesel Fuel Delivery and Air Management Systems (Intro)</td>
<td>TBD</td>
<td>502</td>
</tr>
<tr>
<td></td>
<td>Verify the Function and Diagnose the Fuel Delivery and Filtering System on Chrysler Group 5.9-liter and 6.7-liter High-Pressure Common Rail Diesel Engines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Verify the Function and Diagnose the High-Pressure and Fuel Return Systems on Chrysler Group 5.9-liter and 6.7-liter Common Rail Diesel Engines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnose Faults Related to Fuel Supply Contamination</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Management System Components and their Operation on Typical Diesel Engines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mopar/WTI</td>
<td>Chrysler - RAM 6.7L Cummins® Advanced Diesel Exhaust Aftertreatment System</td>
<td>TBD</td>
<td>404</td>
</tr>
<tr>
<td></td>
<td>Diesel Particulate Filter (DPF) Components and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnosing the Diesel Particulate Filter/Aftertreatment System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identify the Selective Catalytic Reduction (SCR) System Components and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnose the Selective Catalytic Reduction (SCR) System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mopar/WTI</td>
<td>Chrysler - 3.0-Liter V-6 Diesel Engine and Fuel Operation, Diagnosis and Repair</td>
<td>TBD</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>Identify Major Engine Components and Tools When Servicing the 3.0-liter VM Diesel Engine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Service: Fuel Pump, Engine Timing, Cylinder Head and Bedplate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Intake: Intake Manifold, Swirl Valve (Actuator and Sensor) and Turbocharger Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensors: O2, Crankshaft, Camshaft Position, Boost Pressure, Coolant Temperature and Mass Airflow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mopar/WTI</td>
<td>Chrysler - Automatic Transmission Electrical &amp; Diagnosis</td>
<td>TBD</td>
<td>304</td>
</tr>
<tr>
<td></td>
<td>Diagnose the Automatic Transmission Electronic Controller System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transmission Controller Types and their Power, Ground and Communication Strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transmission Control System Input Signals, Signal Processing, and Output Signals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnose Transmission Control System Input and Output Devices and Circuitry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mopar/WTI</td>
<td>Chrysler - Vehicle Network Communication Diagnosis</td>
<td>TBD</td>
<td>204</td>
</tr>
<tr>
<td></td>
<td>Understanding Network Components and Features</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LIN (Local Interconnect Network) - Overview and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CAN-B (Controller Area Network) - Overview and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CAN-C (Controller Area Network) - Overview and Diagnostics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bosch/WTI</td>
<td>Chrysler - Evaporative Emission Diagnostics</td>
<td>Bob Pattengale</td>
<td>403</td>
</tr>
<tr>
<td><strong>BOSCH</strong></td>
<td><strong>WTI</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leak Detection Pump (LDP), Natural Vacuum Leak Detection (NVLD) and the Evaporative System Integrity Monitor (ESIM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overview and Diagnostic Tips for all Three Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leak Detection Pump (LDP) Overview and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Natural Vacuum Leak Detection Strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overview and Operation of NVLD and ESIM Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tips and Diagnostic Strategy for Each System</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Denso/WTI</strong></td>
<td>Chrysler - Air Induction &amp; Emissions Systems</td>
<td>Wally Mouridian</td>
<td>301</td>
</tr>
<tr>
<td></td>
<td>Designed to help technicians make the best diagnostic decisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crazy Fuel Trim &amp; O2 sensor issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Great methods for finding elusive Rear Fuel Trim faults</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnosing with O2 sensor “goal voltage”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variable Camshaft Timing (VCT) systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Partial throttle-by-camshaft engines with low idle vacuum</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New weakly documented air injection systems overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The new GPEC PCM system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Definitively identifying failed PCMs vs. other faults</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Best tests for LCP, NVLD &amp; ESIM EVAP systems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**High Performance Vehicle Training**

<table>
<thead>
<tr>
<th>WTI</th>
<th>Electronic Ignition &amp; Fuel Injection Tuning for Performance</th>
<th>Bud Pauge</th>
<th>306</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Performance Tuning for Street and Track, and Economy Tuning</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Management Principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ignition Programming and Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coil and Ignition Design Options - Waste Spark and Coil on Plug</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dwell Control and Timing Mapping</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Supply System Design Elements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WTI</th>
<th>Performance Weber Carburetor Tuning &amp; Fuel System Design</th>
<th>Bud Pauge</th>
<th>206</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Performance and Economy Tuning</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Control and Timing Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Myths and Misinformation on Weber Tuning</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Complete Fuel System Setup, Including Fuel Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correct Tuning for Street and Track</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiple Weber Carburetor Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Porsche 911 / 912 Common Problems and Solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BMW Dual Carburetor Common Problems and Solutions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes

REV 3/14 B
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td><strong>Performance Turbocharging</strong></td>
<td>Allen Osborne</td>
<td>407</td>
</tr>
<tr>
<td></td>
<td>How Does a Turbocharger Work? More complex than it appears</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to Select the Correct Turbocharger for the application</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Prep for Successful Turbocharging</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boost Pressure, How Much is too Much and What to Realistically Expect for Power</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inter-cooling. &quot;The Car With the Best inter-cooler wins&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turbocharging with Different Fuels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZF/WTI</td>
<td><strong>ZF Race Engineering Performance Suspension and Powertrain</strong></td>
<td>Dirk Fuchs &amp; Patrick Orth</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Get an Inside Look at the Professional Service Work at a Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adjustable Shock Absorber Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suspension Settings and Adjustment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driving Behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Difference Settings for High and Low Speed Driving</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clutch and Release Performance Systems and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clutch Release System Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Different Friction Surfaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Race Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahle/WTI</td>
<td><strong>Performance Engine Building</strong></td>
<td>Donny Seyfer</td>
<td>504</td>
</tr>
<tr>
<td></td>
<td>An in-depth comparison of the Ford Coyote engine design alongside the previous 5.0L Ford design</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learn about all the changes in engine design from the block up.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What were the engineering targets when they built the current Ford Coyote?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How can we apply reasonably priced CAD and the examples from new engines to performance builds?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The class will build a 5.0L Ford virtually using CAD and see the outcome of design choices and a couple of actual builds that demonstrate the extremely tricky balancing act of creating a modern, fast street engine that can function day in and day out all while staying within a customer’s specs and budget</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hella Gutmann/WTI</td>
<td><strong>ADAS - Current and Future Autonomous Technology and Diagnosis</strong></td>
<td>Pete Bradley</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>New technologies assisting the driver to operate the vehicle safer; challenges techs in the repair and adjustment of these systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The interconnectivity between vehicle systems and their interaction is key to performing a correct diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Current technologies for autonomous vehicle</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnosis and repair including the calibration and setting required to ensure a fully functioning system</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes

REV 3/14 B
Page 8 of 42
Hella Gutmann/WTI  Thermal Management - Future Technologies and Diagnosis  
Pete Bradley  314 
New challenges in Thermal management Systems to meet demand for the complete Thermal Management of the vehicle
Hybrids and Electrical vehicles are driving most of these challenges and with that complex systems are being developed
Current examples of vehicle systems and an insight into future technologies
Due to complex and integrated systems, the demand on precise diagnosis will force a change in how we approach the diagnosis of these systems

Hella Gutmann/WTI  Vehicle Lighting - Advancements changing the way the road is lit  
Pete Bradley  514
Xenon, LED and Laser Technologies
Signalling and the appearance of the vehicle lighting system now takes on particular styles bringing with it the interaction of various vehicle systems affecting the appearance and warning of other road users
Vehicle lighting is now a safety system and therefore should be treated as such, the different lighting functions need to be correctly set after a repair and how this is done correctly
Correct diagnosis is a deciding factor in the repair decision and knowing which systems are causing the issue and the impact to fixing the problem

CRP/WTI  Electronic Power Steering - Components, Operation, Diagnosis, Common Issues and Repairs  
Peter David  Todd Ciccone  David Hirschhorn  211
Learn From the Experts that Rebuild, Diagnose, and Support Electronic Power Steering Systems Every Day
Electronic Steering Components, Operation, Diagnostics
Vehicle specific issues and fixes
Common Codes That Don't Work and Fixes
Vehicle Specific Issues and Fixes

CRP/WTI  Electronic Power Steering - Components, Operation, Diagnosis, Common Issues and Repairs  
Peter David  Todd Ciccone  David Hirschhorn  411
Learn From the Experts that Rebuild, Diagnose, and Support Electronic Power Steering Systems Every Day
Electronic Steering Components, Operation, Diagnostics
Vehicle specific issues and fixes
Common Codes That Don't Work and Fixes
Vehicle Specific Issues and Fixes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td><strong>Scope Testing Made Simple</strong>&lt;br&gt;Ignition Current Waveform Diagnostics&lt;br&gt;Fuel Injection Current Waveform Analysis&lt;br&gt;Electronic Transmission Diagnostics - Get it Right the First Time&lt;br&gt;Parasitic Loads - Measuring, Limits and Tracing&lt;br&gt;Short Circuit Diagnostics - Tracing, Analyzing and Intermittents</td>
<td>Jeff Bach</td>
<td>415</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Scope Testing Made Simple</strong>&lt;br&gt;Ignition Current Waveform Diagnostics&lt;br&gt;Fuel Injection Current Waveform Analysis&lt;br&gt;Electronic Transmission Diagnostics - Get it Right the First Time&lt;br&gt;Parasitic Loads - Measuring, Limits and Tracing&lt;br&gt;Short Circuit Diagnostics - Tracing, Analyzing and Intermittents</td>
<td>Jeff Bach</td>
<td>513</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Capturing and Finding Intermittents in Any Vehicle System</strong>&lt;br&gt;Techniques and Strategies for Tracking Down Intermittent Complaints in Electronic Systems&lt;br&gt;Identify Different Approaches to Working with the Customer When Dealing with an Intermittent Problem&lt;br&gt;Look at the Pre-Work Needed to Approach Intermittents Armed for Success&lt;br&gt;Identify Several Approach Methodologies to Set up for and Capture the Intermittent on the First Attempt&lt;br&gt;Look at Tools and Techniques of “Duplication” or Simulation to Induce the Problem&lt;br&gt;Data Capture and Analysis, What Works, and What Doesn’t?&lt;br&gt;Case studies Show the Methodology of Each Fix Approach, Which is Unique to the Specific Problem, Actually use the Information From this Class to Fix Cars When you Return to the Shop!</td>
<td>Gary Smith</td>
<td>114</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Fuels, Lubricants and Synthetics - What You Need to Know</strong>&lt;br&gt;Great for Techs, Service Advisors and Shop Owners. This Seminar Will Help You to Understand, Explain and Sell Lubrication-Related Maintenance and Repairs With Credibility, Knowledge and Confidence.&lt;br&gt;Theory and Methodologies of Fuel Blending, Gasoline, Ethanol Fuels and Diesel Fuels. How This Interacts with Today’s Vehicles&lt;br&gt;Additive Packages, Function, Features and Fables&lt;br&gt;Identify the Types of &quot;Synthetic&quot; Oil Products. Practical Use and Abuse&lt;br&gt;The Root Cause of Oil Breakdown Failure and How This Affects Vehicle Systems</td>
<td>Gary Smith</td>
<td>213</td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------------------------------------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Deposits in Diagnostics</strong></td>
<td>Gary Smith</td>
<td>313</td>
</tr>
<tr>
<td></td>
<td>Deposit Formation, Prevention, and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practical Methods for Deposit Removal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Composition of RFG Gasoline and Driveability Effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PCM Compensation to Fuel Control and VVT Timing for Deposits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scan Data Analysis for Deposit Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>J-2534 Programming, Start to Finish</strong></td>
<td>Gary Smith</td>
<td>413</td>
</tr>
<tr>
<td></td>
<td>Overview of J-2534 Programming Covering OEM Software Access, Equipment,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and Tips</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NASTF Interface, Locksmith VSP Info for Key Programming and More</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How J-2534 works, how to get started and provides all the links and information to be successful at programming.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Navigating the Setup Process With OEM Subscriptions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What Mistakes NOT to Make When Getting Started in Programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Understanding Drivability Data PIDS</strong></td>
<td>Gary Smith</td>
<td>512</td>
</tr>
<tr>
<td></td>
<td>What is Equivalence Ratio? How Does Calculated Engine Load Help Me?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How Does Lambda Work?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Theory Behind Total Fuel Trim, and how does this Affect My Diagnosis?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How do the new Electro-Chemical Sensing Pumps Work (O2 and NOx). What does the Data Tell Us?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What's DIFFERENT About GDI Data Streams - A look At Diagnosing GDI with Data</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>REALLY Understand AFR Sensor Data and Diagnosis?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Break Down Vehicle Data Streams and how to Leverage (and Understand) the Data in Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Electronic Engine Mechanical Testing - Transducers and Waveforms</strong></td>
<td>John Thornton</td>
<td>311</td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical Testing using Electronic Tools to verify Base Mechanical Condition and Allow for Complex Engine Mechanical Failure Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Relative Compression Testing, In-Cylinder Compression Analysis and Intake Vacuum Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical Waveform Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Real World Case Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Electronic Engine Mechanical Testing - Transducers and Waveforms</strong></td>
<td>John Thornton</td>
<td>510</td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical Testing Using Electronic Tools to Verify Base Mechanical Condition and Allow for Complex Engine Mechanical Failure Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Relative Compression Testing, In-Cylinder Compression Analysis and Intake Vacuum Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical Waveform Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Real World Case Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI</td>
<td>Diagnosing Engines Using the Latest Test Equipment (Hands-On)</td>
<td>Tom Morgan</td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>Reading and Interpreting Fault Codes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnostic Strategies on Several Major Diagnostic Scanners</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Navigating to Find Vital Diagnostic Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Latest Technology in Test Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denso/WTI</td>
<td>Intermittent Drivability Diagnostic Strategies</td>
<td>Rick Kelly</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>The best ‘First’ tests that give you the most information with the least effort, so you can drill down to the root cause of a drivability fault faster than ever without getting sidetracked</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simple and easy tests quickly answer the questions, ‘Can it breathe?’, ‘Is it fueling?’, and ‘Can we blow it up?’ These aren’t direct compression, fuel pressure, and ignition tests, but rather inferred test values from commonly available visual and Scan Tool information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Customer &amp; technician worksheets to focus the diagnosis of code and n-code drivability faults</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disciplines for testing effectively while not unintentionally correcting the fault before defining it</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volumetric Efficiency testing to verify MAF, compression, cam timing, intake, and exhaust systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Trim testing over a wider range of conditions to let adaptation indicate the nature of the fault</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denso/WTI</td>
<td>Mechanical &amp; Variable Valve Timing &amp; Lift</td>
<td>Gary Machiros</td>
<td>505</td>
</tr>
<tr>
<td></td>
<td>Position sensor codes are often mechanical or variable timing faults. Variable valve timing (VVT) codes are often mechanical timing faults or lubrication issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Trim, MAF, MAP, and other codes and symptoms can be caused by a variety of timing and lift faults</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A repeatable strategy to avoid testing ‘everything’, and instead quickly eliminate possible causes. In this first class of our new ATG Import Series, we’ve fine-tuned this approach to include manufacturer-specific ATG Tips for quick solutions you’d spend hours discovering on your own</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hydraulic, Electronic &amp; Magnetic Clutch VVT systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variable lift &amp; valve clearance faults</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finding stretched/jumped timing without disassembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Differentiating mechanical &amp; VVT failures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stuck actuators vs. stuck solenoid diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finding internal oiling faults from the outside</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leverage Scan Tool PIDs &amp; functions to eliminate the most possible causes with the least effort</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denso/WTI</td>
<td>Advanced Scan Tool Beyond the Flowchart</td>
<td>Wally Mouridian</td>
<td>409</td>
</tr>
<tr>
<td></td>
<td>This Scan Tool class was built using a completely different approach – to show the best PIDs, controls and other Scan Tool functions to use for each diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Know your Scan Tool so well that you can set the flowchart aside and create your own diagnostic path. Not only is this path more accurate – it’s quite a bit shorter than the flowchart. There are dozens of examples of this strategy in action, diagnosing the most common faults</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Trim codes Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EVAP leak and other functional failure codes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>O2 and Air/Fuel sensor codes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misfire code isolation techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EGR functional and flow codes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Body &amp; Chassis codes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scan Tool ‘No-Communication’ faults</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denso/WTI</td>
<td>Advanced Lab Scope</td>
<td>Wally Mouridian</td>
<td>506</td>
</tr>
<tr>
<td></td>
<td>Testing Procedures for Manufacturer Specific Systems and Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emerging Tools and Techniques in Voltage and Current Testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thorough Explanation of Voltage, Resistance, and Current Test Strengths and Weaknesses for Each Low Current (Sensor) and High Current (Actuator)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hand Held and PC Based Lab Scopes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Little used high side &amp; ground voltage drop waveforms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Little Used High Side and Ground Voltage Drop Waveforms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Detailed Pressure/Vacuum Transducer Explanations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Current Probe Testing Strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Available Minimally Invasive Circuit Connection Tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>When the Graphing Multimeter Function is a Better Alternative</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Best Test Setup for the Specific Weaknesses of Each Component</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delphi/WTI</td>
<td>Electrical and Electronic Systems: Essentials in Electrical Circuits</td>
<td>Dave Hobbs</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>Real World Electrical Fundamentals on Understanding Circuits and Multimeter Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced Topics Include Testing Relays, Solid State Devices (Transistors and Diodes) and Mastering Advanced Multimeter Functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced Information on Diagnosing Intermittent Parasitic Battery Drains</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Case Studies That Help Inspire Every Technician to Think Outside the Box when Diagnosing Difficult Vehicle Electrical Problems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delphi/WTI</td>
<td><strong>Comfort, Safety and Security Systems: Emerging Technologies</strong></td>
<td>Ken Zanders</td>
<td>308</td>
</tr>
<tr>
<td></td>
<td>New technologies like autonomous (self-driving) vehicles, radar, and advanced collision avoidance systems. This course is designed to provide insight on the tools and training you'll need to do to be prepared to diagnose and service them. We'll work to determine your personal or business roadmap to get your shop prepared for what’s coming down the road.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delphi/WTI</td>
<td><strong>EVAP Monitors – Diagnose and Repair</strong></td>
<td>Ken Zanders</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>EVAP systems - the challenging ‘maze’ of maneuvers through DTCs. Learn and apply the strategy of baseline of commonality in the bay. Latest OEM system covered - design and function (use natural vacuum, key off pressurized and vacuum pump systems). Practical tips, diagnostic information, various tools and smoke machines. Advanced scan tool information including OBD-II Mode $06 data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bosch/WTI</td>
<td><strong>Essential Skills for Sensor and Actuator Diagnosis</strong></td>
<td>Jim Wilson</td>
<td>214</td>
</tr>
<tr>
<td></td>
<td>A solid diagnostic validation process, with a specific focus on common sensors and actuators. Electrical circuit analysis for common sensors and actuators. How to create a baseline for circuit diagnosis and validation. Developing a diagnostic plan. How to get the most out of your diagnostic tools.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bosch/WTI</td>
<td><strong>Gasoline Direct Injection (GDI)</strong></td>
<td>Karl Schneider</td>
<td>316</td>
</tr>
<tr>
<td>Bosch/WTI</td>
<td><strong>EURO Evaporative Emission Diagnostics</strong></td>
<td>Bob Pattengale</td>
<td>209</td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Bosch/WTI</td>
<td><strong>Bosch Essential Skills for Electrical Diagnostics</strong></td>
<td>Jim Wilson</td>
<td>309</td>
</tr>
<tr>
<td>BOSCH</td>
<td>Essential Skills Needed to Apply Electrical Theory in Real World Practical Situations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Series Circuit Diagnosis for Pumps, Motors and Lighting Circuits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identifying and Diagnosing Parallel Circuits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identifying and Diagnosing Series/Parallel Circuits, Which are the Most Common Circuits on Vehicles Today</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Why you Need Understand the Type of Circuit for Proper Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to Check the Power and Ground Side of any Circuit and Why Voltage Drop is Important</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bosch/WTI</td>
<td><strong>Bosch Common Rail Diesel (CRD)</strong></td>
<td>Karl Schneider</td>
<td>110</td>
</tr>
<tr>
<td>BOSCH</td>
<td>High Level Overview of Bosch CRD Systems With a Focus on the Various Low and High Pressure Fuel Delivery Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>How to Accurately Diagnose no Start and Driveability Conditions With</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRD Theory and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Delivery Methods - High &amp; Low Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Piezo and Solenoid Injector Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overview of Typical Sensors and Actuators</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Aftertreatment System Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bosch/WTI</td>
<td><strong>Bosch Fuel Pump Diagnostics</strong></td>
<td>Karl Schneider</td>
<td>507</td>
</tr>
<tr>
<td>BOSCH</td>
<td>Fuel Pump Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Fuel Pump Diagnostic Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Fuel Pump Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understanding Pressure vs Volume</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Current Probe Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replacement Tips to Avoid Comebacks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Wiring Diagram Analysis - A Framework for Complex Testing &amp; Diagnostics</strong></td>
<td>Jorge Menchu</td>
<td>508</td>
</tr>
<tr>
<td></td>
<td>Effective use of wiring diagrams with color coding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical circuit basics and waveform effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Waveform analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Really understand scope functions and operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Waveform Analysis</strong></td>
<td>Jorge Menchu</td>
<td>410</td>
</tr>
<tr>
<td></td>
<td>Gain a Deeper Understanding of Circuit Analysis and Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diodes, Transistors and Capacitors Effects on Waveforms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coils, Pintles and Magnetic Fields Effects on Waveforms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understanding How Electronics Affect a Waveform and How it Can Show the Circuit Elements</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Case Studies in Waveform Analysis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td>Wiring Diagram Analysis - A Framework for Complex Testing &amp; Diagnostics</td>
<td>Jorge Menchu</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>Effective use of wiring diagrams with color coding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical circuit basics and waveform effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Waveform analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Really understand scope functions and operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Critical Thinking Diagnostic Skills</td>
<td>Jerry Truglia</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>Setting up a diagnostic game plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnostic routines using PCM strategies and Enabling Criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coding and Reprogramming Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure transducers, Real World Case Studies and much more.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Misfire Diagnostics - P0300 Solved</td>
<td>Jerry Truglia</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>Test techniques to diagnosis and repair misfire problems correctly the first time</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chasing down P0300 DTCs resolving problems associated with this DTC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The tools that you can use in nailing down misfire problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Relative Compression tools and analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Mastering The Lab Scope</td>
<td>Jerry Truglia</td>
<td>307</td>
</tr>
<tr>
<td></td>
<td>Important information and diagnostic routines on labscope usage that will help all technicians, from entry level to advanced, quickly diagnose and repair vehicles.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to Connect, Display, and Interpret Labscope Readings on all major brands of Labscopes, Scope Controls, Connections, Channels, Coupling, Time and Voltage Settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scope Controls, Connections, Channels, Coupling, Time and Voltage Settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understanding Major Signal Types and analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transducer when and how to use and analyze signal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Unlocking The Potential Of Your Scan Tool</td>
<td>Jerry Truglia</td>
<td>408</td>
</tr>
<tr>
<td></td>
<td>How to maximize your scan tool proficiency</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strategies for scan data to direct your diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scan data PID Analysis - Bi-Directional Control - Fuel Trim - Mode 6 - Calculated Load - Air Fuel Ratio - O2 Sensor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Freeze Frame analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time to Temperature - Generic OBD II and Enhanced Data. Utilizing your scan tool - scope and meter for a better diagnostic result</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Snap-On, OTC, Launch, EScan among others will be used</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gates/WTI</td>
<td>Hot Heads 2 Advanced Cooling System Design and Diagnosis</td>
<td>Donny Seyfer/Robert Bassett</td>
<td>115</td>
</tr>
</tbody>
</table>

- Thermostat design and management changes - PCM’s are managing mechanical thermostats adding new diagnostic issues.
- Water pump designs have changed - What you have come to believe might actually be hurting your customer’s vehicle.
- Coolant is a science unto itself - There is no universal antifreeze. We will show you how to avoid having 20 different types of antifreeze on the shelf while giving your customers the right product for their vehicle.
- Some cars have 3 cooling systems - We will show you how they work so you can diagnose them.
- What you need to know about Electric Water pumps.
- Do I need to worry about Electrolysis
- Reverse Flow and Balanced Flow Cooling Systems
- Modern Cleaning and Flushing Techniques
- Water Pump Impeller Materials, Cavitation and Failure Patterns
- Multiple pathway PCM managed cooling systems and thermostats
- Why belt noise is symptomatic of a system failure, not a belt issue
- Diagnose a tensioner for failure using the “Spin Cycling” test
- How to check for correct system alignment using the Laser Alignment tool
- The purpose of a Decoupler Pulley and how to diagnose it for failure

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td><strong>Robots Loose in the Streets</strong></td>
<td>Donny Seyfer</td>
<td>315</td>
</tr>
<tr>
<td></td>
<td>Automated Driver Assistance Programs ADAS - A look at all of the technologies that you need to be able to service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A brief overview of sensors with an in-depth look at how they work within their systems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Networked, distributed computing enables ADAS how does it work?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Critical inputs for proper operation and how you should approach them.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seeing eye cars with telepathy - Not science fiction; science now.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is ICE Dead? Where do EV's fit in the ecosystem?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telematics - The internet of Everything and how it affects repair shops</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shops have new risk and opportunity associated with having vehicles like these in their facilities - How do we protect ourselves and our customers?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Center Stack is the new frontier to be able to reach out to customers - apps and messaging are not just for dealers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicles will be able to do more things than you can imagine - How will cars interact with the world around them?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Policy and Self-Driving Cars</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keeping the genie in the bottle and not allowing someone else to take control is the core issue that OE’s, policy makers, aftermarket and dealer associations are struggling with</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How are independent technicians going to be able to access vehicle information?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What are the current impediments to self-driving cars?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What are the current definitions and time lines for autonomous driving cars?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NHTSA, DOT and other interesting acronyms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Scopes &amp; Voltage Drop - How and when to use a scope - Waveform Analysis</strong></td>
<td>Bernie Thompson</td>
<td>509</td>
</tr>
<tr>
<td></td>
<td>When to use a Scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Voltage Drop Analysis essentials</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How a Circuit affects Waveform Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scope Fundamentals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Understanding Fuel Injection</strong></td>
<td>Bernie Thompson</td>
<td>310</td>
</tr>
<tr>
<td></td>
<td>Fuel delivery calculations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>It's all about the air</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volumetric Efficiency (VE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mass Air Flow Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The diagnostic relationship between Fuel Trim and Volumetric efficiency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Logical Diagnostics</strong></td>
<td>Scot Manna</td>
<td>414</td>
</tr>
<tr>
<td></td>
<td>Vehicle Repairs to Illustrate how to tackle difficult vehicle Diagnostic Problems with a logical, direct approach</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to use Scan Tools and Scopes to perform testing along with Data Analysis to determine the root cause of a problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Real world case studies in Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI</td>
<td>Variable Valve Timing Diagnostics</td>
<td>Scot Manna</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>Variable Valve Systems - Theory, operation and diagnosis of current vehicle valvetrain designs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scan Tool Diagnostics and Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common failures diagnostics and repair</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variable Displacement Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variable Valve Lift Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTI</td>
<td>GDI: Practical Diagnostic Techniques</td>
<td>Todd Doty</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>Practical testing techniques applied to gasoline direct injected (GDI) engines supported by a working understanding of system and component operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Essential testing techniques which can be applied to a variety GDI equipped vehicles regardless of make or model</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The proper use of common diagnostic tools, scan data analysis and proper test drive techniques to help accurately diagnose some of the more common issues found on GDI engine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTI</td>
<td>HVAC: Essential Diagnostics</td>
<td>Jim Cokonis</td>
<td>312</td>
</tr>
<tr>
<td></td>
<td>A solid foundation of essential HVAC diagnostic procedures, based upon diagnostic best practices, to assure correct and complete diagnostic conclusions of common HVAC failures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temperature and pressure testing, the diagnosis of compressor clutch controls, PWM fan diagnostics, and variable displacement compressor controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to evaluate overall performance and efficient choice of diagnostic methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internal heat exchangers and how they change expected test results compared to a “traditional” system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTI</td>
<td>Vehicle Fluids: Lubricant &amp; Filtration Technologies</td>
<td>Peter Orlando</td>
<td>412</td>
</tr>
<tr>
<td></td>
<td>This class will enable today’s technician to understand why oil is an engineered part of a more complex drivetrain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The choices the consumer has with choosing the correct oil and filter media for their vehicles, so we can protect their powertrain warranty</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laboratory analysis of oils to fully understand what occurs to the oil in its useful life and how much life is left in it at the drain interval</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced gasoline engine technologies which rely on proper OE oil formulations to work properly</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Actively use provided worksheets and other support material to understand modern lubricants and filtration technologies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTI</td>
<td>Asian EVAP Diagnostics</td>
<td>Adam Robertson</td>
<td>511</td>
</tr>
<tr>
<td></td>
<td>The operation and diagnosis of modern Asian import evaporative emission</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>systems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toyota, Honda, Nissan and Mazda</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leak detection strategies used by these manufacturers have transitioned</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>from split, vacuum based leak detection to engine off natural vacuum</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EONV) leak detection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Each strategy uses unique hardware and diagnostic methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technicians will gain valuable knowledge about how these systems really</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>work, as well as practical testing techniques which can be used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>immediately to improve diagnostic efficiency</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emphasis on the effective use scan tool data and bidirectional controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to diagnose EVAP problems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Transmission Training

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF/WTI</td>
<td><strong>ZF 8HP Transmission Second Generation Operation and Diagnostics (Hands-On) - Part 1</strong></td>
<td>Niel Speetjens</td>
<td>416</td>
</tr>
<tr>
<td></td>
<td>ZF 8HP Second Generation Operation and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Mechatronic and Pressure Regulators</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Second Generation Torque Converter Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oil Change Service Procedures and Tricks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transmission Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Problems and Solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8HP Adaptations: To Reset or Not To Reset?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF/WTI</td>
<td><strong>ZF 8HP Transmission Second Generation Overhaul - Part 2</strong></td>
<td>Niel Speetjens</td>
<td>515</td>
</tr>
<tr>
<td></td>
<td>ZF 8HP Second Generation Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Failures, Repairs and Service Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hands on the 8HP Second Generation Transmission</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comparison Between the 8HP First and Second Generation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special Tools</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF/WTI</td>
<td><strong>Inside Look in ZF Mechatronics (Hands-On)</strong></td>
<td>Niel Speetjens &amp;</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>Function and operation of ZF Mechatronics</td>
<td>Francisco Moreno</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hydraulic Basics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechatronic Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical and Electronically Testing of Mechatronic Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hands on ZF Mechatronics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disassembly and Assembly of 6HP and 8HP Mechatronics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Servicing a Mechatronic Units</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inside Look in the 9HP Valve Body</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF/WTI</td>
<td><strong>Volkswagen/Audi 6 speed DSG Transmission Operation, Diagnostics - Part 1</strong></td>
<td>Niel Speejens &amp; Dirk Fuchs</td>
<td>216</td>
</tr>
<tr>
<td></td>
<td>Operation and Diagnostic Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Torque Flow Diagrams</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Clutch Tolerance Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical Clutch Learning Procedure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adaptation of the DSG</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dual Mass Flywheel Common Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechatronic Operation and Diagnostic</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Failures, Repairs and Service Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZF/WTI</td>
<td><strong>Volkswagen/Audi 6 speed DSG Transmission Operation, Diagnostics - Part 2</strong></td>
<td>Niel Speejens &amp; Dirk Fuchs</td>
<td>318</td>
</tr>
<tr>
<td></td>
<td>Transmission Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Failures, Repairs and Service Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical Clutch Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Clutch Tolerance Adjustments</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hands-on Disassembly and Assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transmission Calibration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZF/WTI</td>
<td><strong>ZF 9HP Transmission Operation and Overhaul</strong></td>
<td>Francisco Moreno</td>
<td>417</td>
</tr>
<tr>
<td></td>
<td>Operation and Diagnostics, Torque Flow</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dog Clutch Testing and Common Failures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve Body with Pressure Sensor Evaluation and Assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transmission Control Unit Pinout Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Torque Converter Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Problems and Solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZF/WTI</td>
<td><strong>ZF 6HP Transmission Operation and Diagnostics (Hands-On) - Part 1</strong></td>
<td>Francisco Moreno</td>
<td>215</td>
</tr>
<tr>
<td></td>
<td>ZF 6HP Operation and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Torque Converter Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oil Change Service and Different Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnostics and Servicing of Mechatronic Unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hands on / Disassembling and Assembling of 6HP Mechatronics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Problems and Solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6HP Adoptions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZF/WTI</td>
<td><strong>ZF 6HP Transmission Overhaul - Part 2</strong></td>
<td>Francisco Moreno</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>ZF 6HP Operation and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Torque Converter Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Failures, Repairs and Service Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hands on - Disassembling and Assembling of 6HP Transmission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| **ZF/WTI** | Powertrain Torsional Damping System  
Clutch Operation: Pull and Push Type  
Clutch Release System Operation and Diagnosis  
Torsional Damping Systems Operation and Diagnosis (Dual Mass Flywheel)  
Diesel Engine Operation and Diagnosis (Pump Nozzle and Common rail)  
Influence of Engine to the Dual Mass Flywheel  
Service Bulletins | Fransisco Moreno | 516 |
| **WTI** | Mercedes - 722.9 (Hands-On) Class with Introduction Into the New 9-Speed Automatic Transmission (725.0)  
722.9 Modified Oil Container and Oil Change Procedure  
Hands-on Disassembly and Assembly of 722.9  
Electrohydraulic Control Module and Solenoid Replacement Procedure  
DIRECT SELECT Module (DSM) and Common Problems  
Introduction of Auxiliary Oil Pump (ZÖP)  
Procedure for Customer Complaints & Repair  
Comfort-Related Complaints in Torque Converter  
Introduction to The New 9-Speed Automatic Transmission (725.0)  
Fuel Economy (FE) Torque Converter  
Power Transmission – Power Flow / Oil supply  
Valve Body Components / Transmission Control Module | Nathan Canson | 217 |
| **WTI** | Mercedes - Automatic Transmission (7G-DCT) 724.0 - (Hands-On Class) | Nathan Canson | 319 |
| Disassembly and Assembly of 7G-DCT  
Rear Axle Assembly From All-Wheel Drive Models  
Use of Special Tools  
Practical Experience Activities and Diagnosis  
Identifying Transmission and Axle Component Locations and Functions  
Disassembly and Assembly of 7G-DCT Transmission |
### Asian Vehicle Training

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denso/WTI</td>
<td>Toyota Hybrid Diagnostics</td>
<td>Dean Parsons</td>
<td>321</td>
</tr>
<tr>
<td><strong>Real-world data on maintenance issues, trouble codes, costly diagnostic mistakes, specific failure patterns and other ‘in the trenches’ information</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>How the systems interact, how they set certain codes, and how to pick the best tools and tests to safely isolate faults</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Known good Scan Tool and Lab Scope examples from the most problematic systems, as well as some great fault examples</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High voltage battery failures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Low voltage faults causing misleading codes &amp; symptoms</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery and transaxle overheating faults</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Various READY-up issues</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Escape A/C-cooled traction battery faults</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Electric power steering and A/C system failures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ABS &amp; regenerative braking problems</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shifting and Park command faults</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Prius coolant storage, HC storing cats, and exhaust-heated cooling systems</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Engine no-start, no-crank, misfire, whining, rumbling, and other diagnostic tips</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Denso/WTI | Hyundai/KIA - Air Management & Emissions Systems | Dean Parsons | 219 |
| **Information you can ‘think’ your way through diagnostics to beat the flowchart.** |
| **AIR MANAGEMENT SYSTEM COVERAGE** |
| **MAP and MAF sensors, and how each is affected by various breathing and sensor faults** |
| **Traditional idle controls and generations of Electronic Throttle Controls (ETC)** |
| **Electronic Wastegate Turbochargers with intake side boost-dumping (Ration Control Valve)** |
| **Variable induction systems coverage, including VIM, VIS, and VCM** |
| **EMISSIONS SYSTEMS COVERAGE** |
| **Conventional EVAP systems and monitors** |
| **DM-TL EVAP systems with unique heated leak detection pumps – learn how they fail** |
| **Strangely named PIDs that you’d never recognize** |
| **EGR systems** |
| **Catalytic converter diagnostics using Scan Tool PIDs & functions** |
| **Continuously Variable Camshaft Timing (CVVT) systems and the issues that cause the most failures** |

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td><strong>Toyota Hybrid Technology Update</strong></td>
<td>Dave Macholz</td>
<td>517</td>
</tr>
<tr>
<td></td>
<td>4th Generation Toyota Hybrid Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2ZR-FXE 2016 Prius Engine Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle Control History Techstream Functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Diagnostic Trouble Code architecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Megohmmeter Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Milliohmmeter Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnostic Strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Toyota/Lexus Body Electrical</strong></td>
<td>Dave Macholz</td>
<td>418</td>
</tr>
<tr>
<td></td>
<td>Electrical Wiring Diagrams and Symbols</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wiring Harness and Connector Repair</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toyota Multiplex Communication Networks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced Multimeter Functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Picoscope Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Toyota/Lexus New Engine Technology</strong></td>
<td>Dave Macholz</td>
<td>320</td>
</tr>
<tr>
<td></td>
<td>2GR-FKS 3.5L Direct Injected V-6 – Tacoma, Highlander, Sienna, RX 350</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D4-S Direct Injection Operation and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VVTi-W - Variable Valve Timing with Intelligence – Wide Valve Opening Angle</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8AR-FTS – 2.0L Turbo – Lexus NX, Lexus RC – Toyota Camry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toyota Turbo System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Honda/Acura Engine Technology</strong></td>
<td>Brandon Steckler</td>
<td>218</td>
</tr>
<tr>
<td></td>
<td>Honda Engine Fuel, Ignition and Emissions Systems Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical Testing: Utilizing Traditional Tools, the Scan Tool and Lab Scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda V-TEC and VTC – Variable Valve Lift and Timing – Overview, Operation and Case Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda Misfire Diagnosis- Where to Start To Get a Quick Fix</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EGR System Diagnosis and Repair Using Scan Tool and Scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda A/F Sensors: 4 and 6 Wire – Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finding Timing Chain Stretch Issues Utilizing Waveform Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda Earth Dreams Direct Injection Systems: Bi-Directional Testing and Related Repair Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda EVAP System Overview and Case Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical and Driveability Diagnosis With a Focus on the K20, K24 and J35 Engines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Problems you will see in Your Service Bay</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td><strong>Honda Service Information and Scan Tool</strong></td>
<td>Brandon Steckler</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>Integrating Factory Service Information Including Service Express and SIS Into Your Shop</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda Electronic Wiring Diagrams</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Over The Air (OTA) Programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda Diagnostic System (HDS) Factory Scan Tool software – Including HDS, MVCI and Denso DST-I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Honda/Acura Engine Technology</strong></td>
<td>Brandon Steckler</td>
<td>518</td>
</tr>
<tr>
<td></td>
<td>Honda Engine Fuel, Ignition and Emissions Systems Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical Testing: Utilizing Traditional Tools, the Scan Tool and Lab Scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda V-TEC and VTC – Variable Valve Lift and Timing – Overview, Operation and Case Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda Misfire Diagnosis- Where to Start To Get a Quick Fix</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EGR System Diagnosis and Repair Using Scan Tool and Scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda A/F Sensors: 4 and 6 Wire – Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finding Timing Chain Stretch Issues Utilizing Waveform Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda Earth Dreams Direct Injection Systems: Bi-Directional Testing and Related Repair Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda EVAP System Overview and Case Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical and Driveability Diagnosis With a Focus on the K20, K24 and J35 Engines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Problems you will see in Your Service Bay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Honda Service Information and Scan Tool</strong></td>
<td>Brandon Steckler</td>
<td>419</td>
</tr>
<tr>
<td></td>
<td>Integrating Factory Service Information Including Service Express and SIS Into Your Shop</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda Electronic Wiring Diagrams</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Over The Air (OTA) Programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honda Diagnostic System (HDS) Factory Scan Tool software – Including HDS, MVCI and Denso DST-I</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**European Vehicle Training**

<table>
<thead>
<tr>
<th>WTI/Autologic</th>
<th>Exploring Jaguar X351 New Technologies</th>
<th>Steven White</th>
<th>119</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Communication Networks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Security Systems and Key Programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Suspension and Adaptive Damping</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Body Electrical Features</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Infotainment Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connected Car Technology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI/Autologic</td>
<td><strong>Exploring the Jaguar XF 2008-2010</strong></td>
<td>Steven White</td>
<td>420</td>
</tr>
<tr>
<td></td>
<td>Communication Networks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Battery Monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jaguar Sense</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pedestrian Protection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Key Programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Petrol Engines and Drive Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Introducing the F-Pace, Jaguar Cars first SUV</strong></td>
<td>Tom Morgan</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>History and SUV development</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine applications, specifications, unique features</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drivetrain technology and design overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chassis technology and design overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical system design and function</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common problems, service and maintenance tips, related service bulletins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Jaguar Cars F-Type - a true two-seater sports car</strong></td>
<td>Tom Morgan</td>
<td>322</td>
</tr>
<tr>
<td></td>
<td>Jaguar sports car development and history</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine applications, specifications, unique features</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drivetrain technology and design overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chassis technology and design overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical system design and function</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common problems, service and maintenance tips, related service bulletins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Jaguar/Land Rover 5.0 Engine (Hands-On)</strong></td>
<td>Kelly Conklin</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>Hands on Demonstration Covering Major Engine Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Pressure Fuel Pumps Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cam Timing and How to Set Up and Check the Engine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Systems and Component Overviews</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Jaguar/Land Rover 5.0 Engine (Hands-On)</strong></td>
<td>Kelly Conklin</td>
<td>519</td>
</tr>
<tr>
<td></td>
<td>Hands on Demonstration Covering Major Engine Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Pressure Fuel Pumps Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cam Timing and How to Set Up and Check the Engine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Systems and Component Overviews</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Discovery 5 New Technology Derived From the Adventure</strong></td>
<td>Dave Meseck</td>
<td>421</td>
</tr>
<tr>
<td></td>
<td>Overview and Walkaround</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multi-Can Communications</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How the New Technology Incorporated</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Body Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chassis Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driveline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>2014 and Up Range Rover Sport Redesigned and Diesel Powered</strong>&lt;br&gt;Electrical Power Systems&lt;br&gt;Body Systems Overview and Diagnosis&lt;br&gt;Multi-Can Communications&lt;br&gt;Chassis systems Common Issues&lt;br&gt;Driveline</td>
<td>Dave Meseck</td>
<td>221</td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Porsche Type 991 &amp; 991.2</strong>&lt;br&gt;Review of the 911 (991) Models&lt;br&gt;Overview of Forced Induction Engines (991.2)&lt;br&gt;Engine Management System Overview&lt;br&gt;Running Gear and Body Changes</td>
<td>Caleb Pacheco</td>
<td>225</td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>2009 to present Porsche Type 970 Panamera</strong>&lt;br&gt;Review of the Panamera (970) Model&lt;br&gt;Mechanical and Electrical Overviews&lt;br&gt;Network Overview&lt;br&gt;Autologic Functions and Routines</td>
<td>Caleb Pacheco</td>
<td>525</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Volvo New Technology</strong>&lt;br&gt;Volvo's new engine family&lt;br&gt;Volvo's system of direct injection.&lt;br&gt;New fuel system components and configuration&lt;br&gt;Several new system components&lt;br&gt;Volvo's Hybrid system&lt;br&gt;Volvo's brake-by-wire system.&lt;br&gt;Electric drive rear axle system</td>
<td>Allen Osborne</td>
<td>118</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>VW/Audi Engine Management</strong>&lt;br&gt;Engines Covered: 2.0 FSI, 2.0 TSI, 3.2 &amp; 3.6 TSI VR6&lt;br&gt;Air Mass Calculation and Fuel Trim Diagnosis&lt;br&gt;&quot;Tumble Flaps&quot; Intake manifold design and failures&lt;br&gt;High and Low Pressure Direct Injection Fuel Systems&lt;br&gt;Ignition Management System Overview and Misfire Diagnosis&lt;br&gt;Turbocharging Technology Including the Diagnosis and Repair of Boost Related Problems&lt;br&gt;Variable Camshaft Timing Design and Function&lt;br&gt;Emissions Systems&lt;br&gt;Cooling Systems</td>
<td>Cameron Conover</td>
<td>122</td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>VW/Audi Engine Management</strong></td>
<td>Cameron Conover</td>
<td>522</td>
</tr>
<tr>
<td></td>
<td>Engines Covered: 2.0 FSI, 2.0 TSI, 3.2 &amp; 3.6 TSI VR6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Mass Calculation and Fuel Trim Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;Tumble Flaps&quot; Intake manifold design and failures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High and Low Pressure Direct Injection Fuel Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ignition Management System Overview and Misfire Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turbocharging Technology Including the Diagnosis and Repair of Boost Related Problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variable Camshaft Timing Design and Function</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emissions Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooling Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZF/WTI</td>
<td><strong>Hybrid Technologies in Volkswagen/Audi and Porsche</strong></td>
<td>Dirk Fuchs</td>
<td>520</td>
</tr>
<tr>
<td></td>
<td>Hybrid - Operations and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Safety, Switches and Shutoffs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Battery System Diagnostics and Programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Voltage Component Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>VW Audi - Service &amp; Repair Essentials</strong></td>
<td>Don Bonelli</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>VW/Audi Scan Tool Approach and Usage</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wiring Diagrams, Usage and Strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Service Information Usage and Strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Networking Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Battery Energy Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Immobilizer and Key Coding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driver Information and Flexible Service Intervals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special Service Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>VW New Technology</strong></td>
<td>Don Bonelli</td>
<td>423</td>
</tr>
<tr>
<td></td>
<td>Night Vision System Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACC Adaptive Cruise Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dynamic Steering Operation and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audi Select-Drive Select Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lane Change Assist</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driver Information Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sport Differential Operational Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Innovations in HVAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stop Start Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Innovative Thermal Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Networking and Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Battery Energy Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Autologic VW/Audi Diagnostics &amp; Coding</strong></td>
<td>Craig Shippy</td>
<td>323</td>
</tr>
<tr>
<td></td>
<td>Live Demonstration on Engine Timing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel System Components and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Live Data with Known Good Values</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Problems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes.
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI/Autologic</td>
<td>Introduction to ODIS for Volkswagen/Audi</td>
<td>Craig Shippy</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>Vehicle Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Control Unit replacement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control Unit Updating and Coding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Component Protection Removal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Key Programing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Component Protection Removal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remote Programing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td>Introduction to ODIS for Volkswagen/Audi</td>
<td>Craig Shippy</td>
<td>521</td>
</tr>
<tr>
<td></td>
<td>Vehicle Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Control Unit replacement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control Unit Updating and Coding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Component Protection Removal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Key Programing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Component Protection Removal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remote Programing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZF/WTI</td>
<td>Volkswagen Brake/Chassis Dynamics</td>
<td>Dirk Fuchs</td>
<td>422</td>
</tr>
<tr>
<td></td>
<td>Steering Systems Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electromechanical Steering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Basic Settings and Flashing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dynamic Steering (Audi)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driver Assistance Functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Side Assist</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lane Assist</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adaptive Cruise Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic Parking Brake (TRW)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brake System Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Issues and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>VW/Audi Driveability</td>
<td>John Thornton</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>This class covers a wide range of topics on these vehicles. Each case study includes a discussion of the system being diagnosed, and an explanation of the scan data/scope data used to make the diagnostic decision</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2009 Audi Q5 3.2L CALB Secondary Air Issue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2008 Audi A4 Quattro 2.0L BWT EVAP Issue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2007 VW Passat 2.0L BPY Turbo Boost Issue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2006 VW Passat 3.6L VR6 HP Pump Control Issue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2008 VW Passat 2.0L CCTA Low Pressure Pump Control Issue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2011 Audi Q5 2.0L CAEB Misfire Issue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2009 Audi A4 2.0L CAEB Intermittent No Start</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Immobilizer and Electronic Steering Lock case study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Introduction to Mercedes Star Tekinfo</strong></td>
<td>Dennis Woll</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>Star Wiring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DTB and LI Document Search</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WIS (Workshop Information System) Navigation and use</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EPCnet (Electronic Parts Catalogue)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CVTekinfo - Sprinter Information System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applying Coding/ Programming as per Star Tekinfo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI/Autologic</td>
<td><strong>Mercedes Diesel Engine Diagnosis and Repair</strong></td>
<td>Dennis Woll</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>642 Engine Component Overview and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>651 Engine Components Overview and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Issues and Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Diagnosing Mercedes Automotive Electronics - On-Board Bus Systems</strong></td>
<td>Ian Lebby</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>Energy Management, Network Monitoring and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identifying Malfunctions in the CAN Bus Network and FlexRay</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overall Network Using an Example, Potential Distributors, Terminating Resistors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gateways On-Board Electrical System Structure, Function and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CAN Bus, FlexRay™ and LIN Bus, CAN Bus Malfunctions and Troubleshooting</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ohm’s Law and Apply it During Troubleshooting</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Networking Physical Layer Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accurate Measurements of Voltage, Current and Resistance Using a Multimeter</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Characteristics of Series and Parallel Circuits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Bus Systems and Networking, Characteristics and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Mercedes - E-Class (W213) – Technical Launch</strong></td>
<td>Ian Lebby</td>
<td>523</td>
</tr>
<tr>
<td></td>
<td>Introduction to the New 2017 E-Class (W213)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operating Principles and Function of Radar-Based Assist Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radar operation in Assist Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Principles, Design of and Calculations Made by Radar Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alignment of Radar Sensors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Limitations of Radar-Based Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Physics of Driving as Related to Radar Assist System Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telematics NTG 5.5 System Innovations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mercedes 360 Degree Camera, Night View Assist and Thermal Imaging Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flex Ray Network Architecture and Ethernet Diagnostic Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intelligent Battery Sensor (IBS)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td>Mercedes Body Systems IV</td>
<td>Ian Lebby</td>
<td>324</td>
</tr>
<tr>
<td></td>
<td>S-Class (V222) &amp; E-Class 213 Introduction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Philosophy of Intelligent Drive, Drive Pilot and Autonomous Drive Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Acquisition, Networking and Recognition</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collision Avoidance and Amelioration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telematics NTG 5.5 System Innovations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mercedes 360 degree Camera, Night View Assist and Thermal Imaging Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mercedes Magic Body and Wiper Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mercedes-Benz Magic Suspension (Active Body Control) and Common Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mercedes Braking Systems and PRE-SAFE Functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flex Ray Network Architecture, Ethernet and Diagnostic Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Mercedes Metris (New Minivan) - Introduction to Service</td>
<td>Nathan Canson</td>
<td>425</td>
</tr>
<tr>
<td></td>
<td>Chain Drive and Camshaft Adjustment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>An Overview of the Special Features of the M274</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Combination of Direct Injection with Turbocharging</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced Camshaft Adjusters for Optimized Engine Timing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demand-Controlled Multi-spark Ignition</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Problems and Tricks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Model 447 Overview, Both Vehicle Variants</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gasoline Direct Injection for The Spray-Guided Mercedes-Benz Combustion System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parameterizable Special Module (PSM) or Multi-Purpose Module (MPM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Mercedes Engine IV</td>
<td>Johann Chua</td>
<td>524</td>
</tr>
<tr>
<td></td>
<td>M276 (V6) vs M278 (V8) Comparison</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Timing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low and High-Pressure Fuel Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Supply Components and Function</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure and Function of the Low and High Pressure Fuel Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Ducting and Boost Pressure Control Function of all Mentioned Engine Variants</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure and Function of the Engine Cooling and Lubrication Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust Gas System and Cam Timing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turbo Charging System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Charge Air System M278 Diagnosis and Troubleshooting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| WTI     | **Mercedes Hybrid Drives**  
The Principles and Goals of Hybrid Vehicles  
Two Types of Parallel Hybrid Drivetrain and Their Advantages and Disadvantages  
Introduction to the P2 Hybrid Drive and its Characteristics  
P2 Functions, Sub-Functions and Operation Strategy  
Networking and Interoperation  
Safety and Qualification Types  
The Principles of the Series Hybrid Drivetrain  
Advantages of the Series Hybrid / Parallel Hybrid  
Series Hybrid / Parallel Hybrid System Components | Johann Chua | 224 |
| WTI     | **Mercedes - Suspension System Diagnosis and Repair**  
MAGIC BODY CONTROL in Model Series 222  
ROAD SURFACE SCAN Model Series 222 and Curve Inclination Function Model Series 217  
AIR BODY CONTROL Model Series 253  
AIRMATIC in Model Series 205  
AIRMATIC and ACTIVE CURVE SYSTEM Model Series X166 or 292  
Diagnosis of the AIRMATIC / AIR BODY CONTROL  
Steel Suspension Variants  
Common Problems With ABCII, Bleeding and Diagnosis.  
Data Acquisition, Networking and Recognition | Johann Chua | 424 |
| WTI/Autologic | **BMW/Mini J2534 Pass Through**  
BMWWTIS.com Subscription Setup and Cost  
PC Requirements and Settings  
Connectivity Requirements  
ISTA Abilities and Limitations  
Installing BMW ISTA (integrated service and information)  
ISTA/P First Start Up  
Vehicle Requirements Before Programming  
Programming and Encoding EGS (Transmission Control Unit) with J2534  
Technical Support | Nelson Vargas | 227 |
| WTI     | **Mini Convertibles**  
R52 Convertible Top Operation  
R57 Top Changes and Overview  
Convertible Top Repairs, Adjustments and Common Failures  
F57 Convertible Top Introduction | Drew Wolfe | 529 |
| WTI     | **Mini Engine Management**  
First Generation (R53 W11) Supercharger Fundamentals  
Second Generation (R56) Direct Injection Overview  
N14/N18 Turbocharging Overview and Issues  
Vanos, Valvetronic Testing and Common Faults  
Tips and Tricks for Diagnosis | Paul Rubert | 230 |
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td>BMW/Mini Energy Management</td>
<td>Eric Scharping</td>
<td>228</td>
</tr>
<tr>
<td></td>
<td>Energy Management - Components, Operation, Diagnostics, 2002 to 2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strategies of the Energy Management System - Drivability, Body Electronics and Active Chassis Diagnostic Routines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>An efficient routine that will capitalize on available information and eliminate guess work on vehicles that many workshops would consider “Problem Cars”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintenance and Repair - Best Practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment Requirements - For Diagnosis, Repair, and Maintenance of the Energy Management System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW/Mini Advanced Bus Systems</td>
<td>Eric Scharping</td>
<td>428</td>
</tr>
<tr>
<td></td>
<td>Practical Bus Operation to Fix Cars Now</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All BMW Bus Systems Covered</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bus System Waveform Analysis and Diagnostics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the Symptom Caused by a Wire Harness Defect or a Faulty Control Module?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The equipment required to diagnose and repair a Bus System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW/Mini B38/36/48/46 Engines</td>
<td>Drew Wolfe</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td>New “B” Engine Module Designs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel HPP, EKP and Direct Injection Overview and Repair Tips</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Vanos Design for BMW/Mini</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valvetronic Overview With Compression Test Do's and Don't's</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Design MAP Controlled Oil Pump With Vacuum Pump Integration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Issues and Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW/Mini Fuel Trim and Misfire Diagnosis</td>
<td>Drew Wolfe</td>
<td>229</td>
</tr>
<tr>
<td></td>
<td>Understanding Long Term and Short Term Fuel Trims</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using Additive/Multiplicative or Lambda Numbers For Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misfire Diagnosis and Testing Tips and Tricks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compression and Leakdown Guidelines With Valvetronic Engines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Changes and Updates to Misfire Data on Scan Tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW/Mini Tech Info - Part 1</td>
<td>Drew Wolfe</td>
<td>328</td>
</tr>
<tr>
<td></td>
<td>AIR (Aftersales Information Research) Application</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Locate VIN Specific Bulletins and Wiring Diagrams</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Repair Instructions and Labor Times Within Single User</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Navigate New Wiring Diagrams With Hyperlinks to Connector Locations, Views and Wiring Colors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes

REV 3/14 B  
Page 33 of 42
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td>BMW/Mini Tech Info - Part 2</td>
<td>Drew Wolfe</td>
<td>429</td>
</tr>
<tr>
<td></td>
<td>ISTA 4 (Integrated Technical Application) Dealer Level Diagnostics and Programming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISTA/P Programming, Coding, Performing Retrofits and Guidelines for Success</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting up ISTA Systems and Choosing the Correct Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Troubleshooting Your Systems and Getting Tech Support From BMW</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scanning Faults and Using Guided Troubleshooting Test Plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW/Mini Braking Systems and Traction Control</td>
<td>Paul Rubert</td>
<td>430</td>
</tr>
<tr>
<td></td>
<td>Brake System Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ABS/AST+C/DSC Traction Control Systems and Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sport Brake Upgrades: Mini JCW and BMW Carbon Ceramic</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Retrofits, Upgrades and Bleeding Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW/Mini Intro Class</td>
<td>Paul Rubert</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>How BMW and Mini Got Their Starts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Where to go for Info and Diagnostic Help</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KL &amp; DIN Designations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW/Mini Infotainment</td>
<td>Paul Rubert</td>
<td>329</td>
</tr>
<tr>
<td></td>
<td>I-DRIVE Overview &amp; Generation Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mini M-Joy and Touchpad</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BMW/Mini Connected Apps</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Active Sound Design Module</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programming and Retrofit Guidelines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Activation Codes and Downloading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW Motorsports 4</td>
<td>Luke Murray</td>
<td>325</td>
</tr>
<tr>
<td></td>
<td>Covering &quot;F&quot; Chassis Motorsports Vehicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What we Learned From the E70 MX5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Mechanical Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engines Covered S63/S63TU/S55</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Management Overview and Diagnosis Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chassis System Components and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW 8 Cylinder Engines</td>
<td>Luke Murray</td>
<td>526</td>
</tr>
<tr>
<td></td>
<td>BMW’s N63 and N63tu</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine Management Systems and Mechanical Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Challenges Faced When Applying Turbocharged Direct Injection Design to a V8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advantages and Disadvantages of a Reverse Airflow Configuration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BMW Customer Care Package</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Redesign Incorporating Valvetronic</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Service Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Failures and Diagnostic Routines</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td>BMW New Engine Technology 6 &amp; 8 Cylinders</td>
<td>Luke Murray</td>
<td>426</td>
</tr>
<tr>
<td></td>
<td>Newest 6 &amp; 8 Cylinders Engine Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B58 6 Cylinder Engine - Design, Function and Common Service Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N63TU2 8 cylinder Engine - Design, Function and Common Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical and Electrical System Changes, Updates and Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Newest Crankcase Ventilation Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BMW's &quot;modular design&quot; - Functions and Overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW 6 Cylinder Engines</td>
<td>Luke Murray</td>
<td>226</td>
</tr>
<tr>
<td></td>
<td>BMW's Approach to Turbocharging, Emissions and Efficient Dynamics.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N54 (1st gen) Turbocharged Engine, Design, Function and Common Service Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N55 (2nd gen) Turbocharged Engine, Redesign, Function and Common Service Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Fuel Management and Diagnostic Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diagnostic Principles for Other BMW platforms, i.e., 4-Cylinder Turbocharged Engines.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW 4 Cylinder Engines</td>
<td>Luke Murray</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>Base Model Engines for BMW - Approach to Emissions and Efficient Dynamics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N20 (1st gen) Engine - Design, Function, Common Service Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N26 (SULEV) Engine - Design, Function, Common Service Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Problems, Service Bulletins, Recalls - How to Fix them</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical and Electrical - Design and Function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW N47 Diesel Technology</td>
<td>Brian Chaffe</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>N47 Diesel Principles of Operation and Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel System Operation, CDI Fuel Injection Types and Delivery Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust System Components, DPF and EGR Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Supply System Overview and Turbo Principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DDE Scope Patterns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW N57 Diesel Technology</td>
<td>Brian Chaffe</td>
<td>427</td>
</tr>
<tr>
<td></td>
<td>N57 Diesel Principles of Operation and Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel System Operation, CDI Fuel Injection Types and Delivery Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust System Components, DPF and EGR Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Supply System Overview and Turbo Principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DDE Scope Patterns</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Repair Procedures, Engine Timing and Injection Pump Removal Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault Code Listings With Test Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------</td>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI</td>
<td>BMW Diesel Emissions</td>
<td>Brian Chaffe</td>
<td>527</td>
</tr>
<tr>
<td></td>
<td>SCR 1 and 2 Operation and Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault Code Listings, Test Procedures and Checking Exhaust Injection Principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metering Pump Operation and Common Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Active and Passive Tank System Diagnostics and Repair</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calibration, Advance Warning System and Reset Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW Valve Train Technology</td>
<td>Scot Manna</td>
<td>326</td>
</tr>
<tr>
<td></td>
<td>VANOS Types, Spline Drive and Vane Phaser Designs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spline Drive VANOS Overhaul</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variable Cam Timing Problems and Testing with Scan Tool PID and Scope Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valvetronic System Evolution and Enhancements</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valvetronic Throttle Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valvetronic Operation and Testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW Convertibles</td>
<td>Eric Scharping</td>
<td>327</td>
</tr>
<tr>
<td></td>
<td>BMW Convertible Tops From E36 to the F33</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>System Components and Function of the Electro-Mechanical Soft Top, Electro-Hydraulic Soft Tops &amp; Retractable Hard Tops (RHT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Handout - Your BMW Convertible Top “go to” Guide in the Workshop</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common Convertible Top Issues and Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Service Modes and Initializations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Repair Techniques and Best Practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>BMW iCars</td>
<td>Eric Scharping</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>BMW I3 (I01) and I8 (I12) Models</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Electric Powertrain Components and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unique Body Electronics Features</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The High Voltage System Components and Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Voltage - Safety Procedures and Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electric Vehicle Maintenance and Repair Guidelines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>Introduction to BMW G Chassis</td>
<td>Eric Scharping</td>
<td>528</td>
</tr>
<tr>
<td></td>
<td>Evolution of BMW Car Models With the Engineering Designation G</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Latest Changes in BMW Body Electronics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Latest Advancements in the BMW Active Chassis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Updates to the Driver Assistance Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintenance and Repair Guidelines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI</td>
<td>Fishing for Millennials: Attracting Them With SEO Content</td>
<td>Jennifer Filzen</td>
<td>335</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If you want to fish for Millennials and attract their attention to your business, you need to use the right bait. Millennials are using their mobile devices to find you, so make sure your business stands out in the digital marketplace. In this interactive workshop, we will show you how to include the best keywords and share your story in such a way that your business will be irresistible to the people looking for you. Millennials love stories that resonate within their hearts and minds, and in this workshop, you will discover the best techniques to reel them in.</td>
<td></td>
</tr>
</tbody>
</table>

| WTI     | Fishing for Millennials: Attracting Them With SEO Content | Jennifer Filzen | 534 |
|         |         | If you want to fish for Millennials and attract their attention to your business, you need to use the right bait. Millennials are using their mobile devices to find you, so make sure your business stands out in the digital marketplace. In this interactive workshop, we will show you how to include the best keywords and share your story in such a way that your business will be irresistible to the people looking for you. Millennials love stories that resonate within their hearts and minds, and in this workshop, you will discover the best techniques to reel them in. |

| WTI     | Recruiting and Training Technicians | Bogi Lateiner | 235 |
|         | Finding Seasoned Techs | Attracting New Technicians | Developing an apprenticeship program that works | How we can shape future generations (as individuals, as shops, as an industry) |

| WTI     | Marketing in the Digital Age | Bogi Lateiner | 435 |
|         | How Technology has changed how we market | Staying Top of Mind | Branding and Targeting your message | Getting the most out of social media | Guerrilla marketing strategies that work |

<p>| WTI     | The Care and Handling of Customers | Bogi Lateiner | 332 |
|         | Phone skills for improving conversion | Handling Price Shoppers | Handling customers when things go wrong, or they are just plain angry | Relationship building techniques | Responding to bad reviews | The importance of how you say it vs. what you say |</p>
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CTI/WTI</strong></td>
<td><strong>Profitable Expansion – Preparing Your Business to Add New Locations</strong></td>
<td>Greg Bunch</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td>Leveraging Industry Developments to Become a Consolidator</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assessing Your Business’ Potential – Today &amp; What’s Possible</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using SWOT Analysis to Expand Your Potential</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strengthening Your Fundamentals For Rapid Growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leadership That Drives Success</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CTI/WTI</strong></td>
<td><strong>Succession Planning – Exit Strategies That Optimize Returns</strong></td>
<td>Greg Bunch</td>
<td>334</td>
</tr>
<tr>
<td></td>
<td>Clarifying Your Professional Future</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understanding the Range of Exit Strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Developing Your Own Unique Future Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driving Your Business Toward Your Desired Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Delphi/WTI</strong></td>
<td><strong>Fundamental Keys to Increasing Service Sales</strong></td>
<td>Dave Hobbs</td>
<td>431</td>
</tr>
<tr>
<td></td>
<td>This course was designed by shop owners and technicians for fellow shop</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>owners and technicians!</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For those relatively new to the selling service, a plus for technicians</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and a refreshing review packed with new tips for veteran service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>advisors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practical information and an abundance of illustrations from both the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>people aspects and technical aspects of making the sale to your</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>customers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Real world role play customer based scenarios round out this fun and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>informative class!</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Delphi/WTI</strong></td>
<td><strong>Service Advisor’s Guide to Selling Preventative Maintenance</strong></td>
<td>Ken Zanders</td>
<td>530</td>
</tr>
<tr>
<td></td>
<td>This course was designed by shop owners, service advisors and technicians</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>for fellow shop owners, service advisors and technicians!</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Techniques to overcome customer objections for services for the cars</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>that ‘aren’t broke’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Updates on the technical side of PM on topics such as changes in motor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>oil technologies and filtration.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Real world role play customer based scenarios round out this fun and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>informative class.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WTI</strong></td>
<td><strong>Being the Boss - Part 1</strong></td>
<td>Bill Greeno</td>
<td>133</td>
</tr>
<tr>
<td></td>
<td><strong>Lead Your Shop to Success</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This class is for shop owners who want to learn to be an effective boss.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The first of a two part series where you’ll learn how to manage the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>people who work for you.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lead Your Shop to Success</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understanding what Leadership is</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identify the Chain of Command in your shop</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learn how one owner can effectively be a Visionary Leader, an Effective</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager, and a Helpful Supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------------------------------------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Being the Boss - Part 2</strong>&lt;br&gt;Develop and Practice Part 1 Knowledge</td>
<td>Bill Greeno</td>
<td>233</td>
</tr>
<tr>
<td></td>
<td>Be the Boss Part 2 - a practical application class (aka Lab Class). Here, those who participated in Part 1 will be able to apply what they’ve learned. &lt;br&gt;Develop and Practice What You Learned in BE THE BOSS Part 1 Identify the values that make your shop special. &lt;br&gt;Vision, Mission, Goals, Tasks How do they work together. How to put these things to use.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>10 Keys to Improving Communication in the Workplace</strong></td>
<td>Bill Greeno</td>
<td>330</td>
</tr>
<tr>
<td></td>
<td>Ever feel like no one is listening! If so, you need this class! 10 keys to improve communication in the workplace &lt;br&gt;Primary impediments to listening and how to repair communication in your shop. &lt;br&gt;Learn what employees want &lt;br&gt;How to develop a healthy culture &lt;br&gt;How to host effective meetings &lt;br&gt;Practice listening exercises that will make you a POWERFUL LISTENER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Creating a Better Business Culture</strong></td>
<td>Bill Greeno</td>
<td>532</td>
</tr>
<tr>
<td></td>
<td>Good culture is when everyone’s needs are being met in the company &lt;br&gt;Learn metrics and techniques to help match your needs and the staff’s needs to be sure they meet the needs of the company &lt;br&gt;Learn what employees want &lt;br&gt;Develop a healthy culture &lt;br&gt;How to host effective meetings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>How to Create the Right Results Every Time</strong></td>
<td>Ryan Clo</td>
<td>231</td>
</tr>
<tr>
<td></td>
<td>Systems and Processes in business help provide a framework to build your success plan &lt;br&gt;Goal Setting, begin with the end in mind &lt;br&gt;Easy methods to measure your results &lt;br&gt;Why consistency matters &lt;br&gt;Managing results and feedback systems &lt;br&gt;Best practices and examples to use daily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Advanced Estimating for Technicians</strong></td>
<td>Ryan Clo</td>
<td>131</td>
</tr>
<tr>
<td></td>
<td>Diagnosing and repairing vehicles correctly is a huge part of what we do but it is greatly diminished when our recommendations are not purchased &lt;br&gt;Our views on sales and sales people &lt;br&gt;Car Count vs. Average Repair Order and why it’s important &lt;br&gt;Inspections, how to maximize your time for the highest returns &lt;br&gt;How to create estimates that sell &lt;br&gt;Psychology of our customer and why we need to understand it &lt;br&gt;The service advisor role in detail</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td>Lean Methodology – How to Get More with Fewer Resources</td>
<td>Ryan Clo</td>
<td>433</td>
</tr>
<tr>
<td>WTI</td>
<td>The Effective Service Advisor</td>
<td>Jeremy O’Neal</td>
<td>134</td>
</tr>
<tr>
<td>WTI</td>
<td>Maintenance Profit Masters</td>
<td>Jeremy O’Neal</td>
<td>234</td>
</tr>
<tr>
<td>WTI</td>
<td>Maximizing Profits Selling Advanced Level Diagnostic Services</td>
<td>Jeremy O’Neal</td>
<td>434</td>
</tr>
</tbody>
</table>

**WTI Lean Methodology – How to Get More with Fewer Resources**

Best practices today are very different than 10 years ago. Leverage methods used by rapid-growth startups to speed up your shop’s success.

- Re-engage your creative side and be on the leading edge of your industry.
- Value building, get to know your customer and their needs
- Validated learning, your shop the petri dish
- Waste reduction and discussions on creative cost reduction
- Continuous improvement and The Pivot
- Leveraging the information age

**WTI The Effective Service Advisor**

Use our unique Time Management Process to manage your most precious commodity

- What the top 1% of Service Advisors do to create maximum sales and production
- How to squeeze every ounce of production out of every day
- What it takes to shatter sales records and provide the ultimate client service experience
- Class bonus - gain an additional 1 hour of productive time every day

**WTI Maintenance Profit Masters**

The ultimate Service Advisors guide to selling maintenance on 2013 - 2016 model year vehicles.

- Bring your maintenance sales skills up to speed
- Insider secrets dealership Service Advisors use to sell maintenance
- Get behind-the-scene access to what the top 1% of Service Advisors are doing to create massive profits
- Vehicle specific information for Mercedes, BMW, VW, Audi, Honda, Toyota, & Nissan

- Advanced sales guide you can implement from the first day back at the shop.
- Your customers will love the expertise you gain from this course.

**WTI Maximizing Profits Selling Advanced Level Diagnostic Services**

What to do when your tech gets in over his head on a driveability diagnosis

- Tech spends 3 hours of diagnosing a vehicle and still no answers. What to do as the shop owner?
- Master the skills needed to educate the customer. Enroll them in the Root Cause Diagnostic Procedure (RCDP)
- You'll leave with the confidence and skills to help you increase your labor revenue on the tough jobs
<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Classes</th>
<th>Instructors</th>
<th>Session Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI</td>
<td><strong>Engagement - Creating a Sales Explosion</strong></td>
<td>Jeremy O'Neal</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>Winning companies have learned how to engage customers in the buying</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>process. Engagement creates clients for life</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The importance of strategic listening skills and how to connect with</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>clients of all types</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focussing on the client, learn how mutual goal alignment can ignite and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>catalyze your desired sales explosion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adapt your communication style to match the style of your client to</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>create true engagement as a trusted service advisor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Master the engagment process and be viewed as the expert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Next Generation Telephone Skills for Optimized Repair Shop Profits</strong></td>
<td>Jeremy O'Neal</td>
<td>533</td>
</tr>
<tr>
<td></td>
<td>Are your telephone skills ready for the next generation of auto repair</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>consumers?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Update your lead conversion skills with telephone price shoppers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Harness the power of technologies that consumers are using every day to</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>obtain repair estimates</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The exact skills that top shops use every day to drive massive car</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>counts and profits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td>**The Numbers that Make You Profitable – Learning to Work Smarter Not</td>
<td>Cecil Bullard</td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>Harder**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Basic Formulas to Diagnose Your Business</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Formulas to Set Your Sales and Production Goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is Financial Balance and Why it is Important</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Best Ways to Improve Margins</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The 5 Keys to Increasing Your Average Repair Order</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How Productivity Affects Your Margins and What it Costs When Your Staff is Unproductive</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Difference Between Accounting Numbers and Management Numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>When and Why Additional Car Count Might Actually Sink You Faster</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>No Excuses – The Secrets to Creating Problem Solvers</strong></td>
<td>Cecil Bullard</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td>Excuse Behaviors and How to Get Past Them</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accountable Behaviors - How to Get Your People Invested</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to Take the Monkeys Off Your Back and Hand Them Back to Staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Success Strategies That Create Good Decisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 Keys to Make Your Job Easier and Get More Done</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creating a Success Culture in Your Business</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Making the Shift From Excuses to Solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor</td>
<td>Classes</td>
<td>Instructors</td>
<td>Session Code</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------------------------</td>
<td>-------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Advanced Selling – You Can Sell Anything You Believe In</strong></td>
<td>Cecil Bullard</td>
<td>531</td>
</tr>
<tr>
<td></td>
<td>7 Key Ways to Overcome Your Fears</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Building Confidence in Your Staff, Yourself and Your Product</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Ways Guaranteed to Stop Emotional Discounting</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Key Phrases to Get Them to Say Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to Sell Maintenance and Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 Keys to Better Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Building an Estimate That Improves Your Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 Things That Will Increase Your Odds of Getting to YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Handling Objections and Increasing Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to NEVER Give a Price Over the Phone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>The Inspiring Leader</strong></td>
<td>Cecil Bullard</td>
<td>331</td>
</tr>
<tr>
<td></td>
<td>How to Share Your Vision and Get Others Invested</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Key Ways to Improve Your Culture</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Secrets of Building Trust With Your Staff and Your Customers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Why Some People Don’t Lead and Others Do</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How to Get Yourself and Your Staff Motivated and Focused</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 Ways to Inspire Your Team to Greatness</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using Goals to Keep People on the Ball</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WTI</td>
<td><strong>Increasing Market Share the Smart Way - How to Find and Attract More &quot;A&quot; Customers</strong></td>
<td>Cecil Bullard</td>
<td>432</td>
</tr>
<tr>
<td></td>
<td>Determine your Cardboard Cutout</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figure out What you Have to Offer Them What They Want</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Where Your A-Customers are and how to Attract Them</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Messaging that Attracts Your Best Customers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The BIG 6 Marketing Necessities</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 Key Marketing Strategies that Work</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How the Proper Plan leads to Success</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Budgeting and Determining Accurate Results</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 Small Changes that Improve your ROI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Classes may be subject to changes