THE AUTOMOTIVE EDUCATOR CONFERENCE

HOSTED BY NACAT IN PARTNERSHIP WITH CALIFORNIA AUTOMOTIVE TEACHERS

2026 Automotive Educator Conference (AEC)

AGENDA

Monday, June 15, 2026
9:00 am - 12:00 pm: Registration
10:30 am - 11:30 am: First-Time Attendee Meeting
11:30am - 12:00 pm: CAT Membership Meeting
12:00 pm - 2:00 pm: Opening General Session, Panel Discussion, & Lunch
2:00 pm - 5:00 pm: Exhibitor Setup
2:00 pm - 2:15 pm: Break
2:15 pm - 5:15 pm Training
4:00 pm - 4:30 pm: Break
5:15 pm - 6:45 pm: Welcome Reception at American River College
Evening: Informal Gathering at Hotel

Tuesday, June 16, 2026
Morning: Breakfast at Hotel
8:30 am - 11:30 am: Training
10:00 am - 10:30 am: Break
11:30 am - 2:30 pm: Lunch and Exhibits
2:30 pm - 5:00 pm: Training
5:00pm - 5:30pm: Break & Exhibitor Prizes
5:30pm - 7:30pm: BBQ & Valve Cover Races
Evening: Informal Gathering at Hotel

Wednesday, June 17, 2026
Morning: Breakfast at Hotel
8:30 am - 11:30 am: Training
10:00 am - 10:30 am: Break
11:30 am - 1:00 pm: Lunch and Awards
1:00 pm - 1:15 pm: Break
1:15 pm - 4:15 pm: Training
2:45 pm - 3:15 pm: Break
5:00 pm - 7:00 pm: California Auto Museum (additional cost)
Evening: Informal Gathering at Hotel

Thursday, June 18, 2026
Morning: Breakfast at Hotel
8:30 am - 11:30 am: Training
10:00 am - 10:30 am: Break
11:30 am - 12:30 pm: Lunch
12:30 pm - 3:30 pm: Training
2:00 pm - 2:30 pm: Break
Evening: Informal Gathering at Hotel

Panel Discussion Details

What does it really take to build a great automotive program today?

Join fellow automotive educators for a dynamic, solution-focused panel discussion that tackles the challenges you face every day — from getting students excited about automotive careers to preparing them for real-world success and building stronger connections with industry.

Don't miss this must-attend opening session — your next great idea might come from the teacher sitting next to you.

Welcome Reception Tour Details

Kick off the Automotive Educator Conference with an exclusive guided tour of American River College's brand-new MCT (Manufacturing, Construction & Transportation) Building—a cutting-edge learning environment designed with today's students and educators in mind!

During the behind-the-scenes experience, you'll explore state-of-the-art labs and instructional spaces for Automotive Technology, Design Tech & Engineering, Electronics, Electrician Trainee, Energy, Welding, and Funeral Services, all intentionally designed to mirror real-world industry settings. This tour isn't just about impressive facilities—it's about ideas you can take home. See how interdisciplinary programs, modern spaces, and built-in student support can elevate automotive education and strengthen your program's impact.

TRAINING

Monday, June 15, 2026

Code	Training	Begins	Ends	Instructor
S1-1	Driving Success: Assessment Strategies for Transportation ***Sponsored by Goodheart-Willcox***	2:15pm	5:15pm	Mandy Green & Brian LaCroix
S1-2	From Classroom to Career: Equipping the Next Generation of Technicians ***Sponsored by Sonic Tools USA***	2:15pm	5:15pm	Bailey Pearson
S1-3	Powerful and Simple Framework for Wiring Diagram Circuit and Waveform Analysis (hands-on) ***Sponsored by AESWave***	2:15pm	5:15pm	Jorge Menchu
S1-4	Why the Brake Rotors are Ground Zero for Today's Brake Service ***Sponsored by Pro-Cut***	2:15pm	5:15pm	Steve Smith
S1-5	Workshop-Oriented Practical Fault Diagnosis on Modern Electric Vehicles (hands-on) ***Sponsored by Lucas-Nuelle***	2:15pm	5:15pm	Dirk Niemeyer

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Code	Training	Begins	Ends	Instructor
S2-1	AI in the Garage: A Strategic Roadmap for the Modern Talent Pipeline ***Sponsored by Minnesota State Transportation Center of Excellence***	8:30am	11:30am	Jeff Copeland & Shawn Haag
S2-2	Teaching as Performance Art ***Sponsored by Electude***	8:30am	11:30am	Dr. Alex Richards
S2-3	Testing Electronics with You as the Student (hands-on) ***Sponsored by ATech Training***	8:30am	11:30am	James Wilson
S2-4	Vehicle Communication Diagnostics ***Sponsored by NAPA Autotech***	8:30am	11:30am	Jason Gloria
S2-5	Where Should Voltage Be (And Not Be?) Hands-On Diagnostics and Safety in EV Systems ***Sponsored by Consulab***	8:30am	11:30am	Baily Soto
S3-1	Educator Roundtable: Challenges & Successes in Automotive Education ***Sponsored by Northern Michigan University***	2:30 PM	5:00 PM	Randy Klitzke
S3-2	Essential Scope Tests **Sponsored by NAPA Autotech**	2:30 PM	5:00 PM	Jason Gloria
S3-3	HV Battery Stress Testing - Preparing Students for Real-World Service ***Sponsored by EVPro+***	2:30 PM	5:00 PM	Russ Hutton
S3-4	Testing Electronics with You as the Student (hands-on) ***Sponsored by ATech Training***	2:30 PM	5:00 PM	James Wilson
S3-5	Where Should Voltage Be (And Not Be?) Hands-On Diagnostics and Safety in EV Systems ***Sponsored by Consulab***	2:30 PM	5:00 PM	Baily Soto
S3-6	BAR Informational Updates ***Sponsored by California Bureau of Automotive Repair***	2:30 PM	5:00 PM	Matt Mahlke

Wednesday, June 17, 2026

Code	Training	Begins	Ends	Instructor
S4-1	Essentials of Onboard Diagnostics (hands-on) ***Sponsored by Delphi***	8:30am	4:15 pm	Rick Escalambre
S4-2	EV Technology and Repair (hands-on) ***Sponsored by AVI***	8:30am	4:15 pm	Tom Rayk
S4-3	Automotive Classroom Tips and Tricks ***Sponsored by Northern Michigan University***	8:30am	11:30am	Randy Klitzke
S4-4	Automotive RF Systems: Effective Pedagogy for the Wireless Era ***Sponsored by Worldpac***	8:30am	11:30am	Cameron Conover
S4-5	Battery Management Hands-On Activity ***Sponsored by EV West***	8:30am	11:30am	Mark Weller
S4-6	Crawl, Walk, Run Instruction and Tactics ***Sponsored by Andy Tirado LLC***	8:30am	11:30am	Andy Tirado
S4-7	Teach TPMS with Confidence: A Complete Instructor Training Experience (hands-on) ***Sponsored by Dill Air Controls Products***	8:30am	11:30am	Sean Lannoo
S5-1	Building Diagnostic Skills with Electrical Fundamentals and Computer-Controlled Circuits (hands-on) ***Sponsored by SBC Training***	1:15pm	4:15pm	Scott Hadzik
S5-2	Identifying Mechanical Failures Using Electronic Methods ***Sponsored by AERA and Pico***	1:15pm	4:15pm	Chris Hamann
S5-3	Parasitic Battery Drains and Modern Charging Systems for Conventional I.C.E. and Electrified Vehicles (hands-on) ***Sponsored by Delphi***	1:15pm	4:15pm	Dave Hobbs
S5-4	Solving the ADAS Information Gap ***Sponsored by Andy Tirado LLC***	1:15pm	4:15pm	Andy Tirado
S5-5	Utilizing AI Resources for Automotive Instructors and Students ***Sponsored by Calhoun Community College***	1:15pm	4:15pm	Steve Berger

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Thursday, June 18, 2026

Code	Training	Begins	Ends	Instructor
S6-1	Building an Electric Drivetrain in the Classroom (hands-on) ***Sponsored by Switch Vehicles***	8:30am	3:30pm	Jozef Antolin
S6-2	Unveiling Future Technology: Tesla Cybertruck - Technology Overview - Diagnostics and More! (hands-on) ***Sponsored by AESWave***	8:30am	3:30pm	Scott Brown
S6-3	Vehicle Communications for Subaru Vehicles (hands-on) ***Sponsored by Subaru***	8:30am	3:30pm	Luis Perez and Laura Hardy-Wilcox
S6-4	An In-Depth Look at the Ford 10R80 Transmission ***Sponsored by ATRA***	8:30am	11:30am	Keith Clark
S6-5	Building a Successful Automotive Program Outside the Classroom ***Sponsored by Skagit Valley College***	8:30am	11:30am	Aaron Klesick
S6-6	Hands-On CAN: Live Scope Traces, Faults, and DIY Classroom Tools ***Sponsored by Worldpac***	8:30am	11:30am	Cameron Conover
S6-7	Systematic Approach to Teaching Ignition Systems Essentials ***Sponsored by Delphi***	8:30am	11:30am	Rick Escalambre
S7-1	Current Trends in Mobile Climate Systems ***Sponsored by Goodheart-Willcox***	12:30pm	3:30pm	Scott Norman
S7-2	Engine Sealing ***Sponsored by AERA***	12:30pm	3:30pm	Chuck Lynch
S7-3	Incorporating High-Voltage Electrical into an Existing Curriculum ***Sponsored by Joliet Junior College / Pearson Education***	12:30pm	3:30pm	Curt Ward
S7-4	Mastering the uScope: Hands-On Diagnstics for Real-World Results ***Sponsored by AESWave***	12:30pm	3:30pm	Tom Broxholm

Pricing Details

	Before Mar 31, 2026	After Mar 31, 2026
NACAT Members	$599	$675
Non-Members	$699	$775

Hotel (newly renovated!)

Wyndham Sacramento
5321 Date Avenue
Sacramento, CA 95841

Cost: $110 per night plus tax (including breakfast)

TRAINING COURSE SELECTION: Selections must be made in advance and are available on a first-come, first-served basis.
MEALS: Breakfast is served with your hotel stay at the host hotel. Lunch is served Monday, Tuesday, Wednesday, and Thursday. Refreshment breaks are each day. Monday evening will be appetizers and Tuesday evening will be dinner. Dinner on Wednesday and Thursday are on your own.
NACAT Member Discounts: NACAT Members receive a $100 discount on registration packages. Visit nacat.org to become a member or click the add-on option during your registration.

REGISTRATION & PAYMENT: To register, please complete the online registration form at www.nacat.org. Registrations must be received no later than June 10, 2026. Registrations accepted ON-SITE ONLY after June 10, 2026. We cannot guarantee availability for late or on-site registrants.
CANCELLATION AND REFUND POLICY: Full refunds will be granted, less a $30 processing fee, if cancellation is received in writing by May 1, 2026. No refunds will be granted after May 1, 2026. Name substitutions will be accepted.

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2026 AUTOMOTIVE EDUCATOR CONFERENCE (AEC) COURSE DESCRIPTIONS

Monday Sessions:

Driving Success: Assessment Strategies for Transportation (S1-1) *by Mandy Green and Brian LaCroix*
This professional development session focuses on empowering educators to effectively assess student mastery and prepare them for industry certifications. We'll utilize the "Concern, Cause, Correction" framework to systematically address challenges in assessment design, certification preparation, and data-driven instruction. This session will move beyond traditional testing methods and explore innovative assessment strategies to ensure students are not only knowledgeable but also ready to excel in their automotive careers.

From Classroom to Career: Equipping the Next Generation of Technicians (S1-2) *by Bailey Pearson*
Tools, Trends, and Strategies for Tomorrow's Technician. We explain the statistics around the Automotive Hiring Technician space, and what we have seen that works starting at the Education Space. We give a roadmap of how Automotive Programs can help mend the gap between the program and the dealership. Also, what we have seen in the funding space and how we can help with that for each program.

Powerful and Simple Framework for Wiring Diagram Circuit and Waveform Analysis (hands-on) (S1-3) *by Jorge Menchu*
1. Equip you with a powerful method for analyzing wiring diagrams and improving your circuit and system reverse-engineering skills – Circuit Color-Coding.
2. Provide a simple foundation for waveform analysis – Mechanics of a Waveform
3. Increase your self-awareness of the mental tools, behaviors, and techniques that support unlocking your full learning potential.

Why The Brake Rotors are Ground Zero For Today's Brake Service (S1-4) *by Steve Smith*
The days of simple replacement are no longer sufficient for providing a perfect brake service. This session will explore the various factors critical to ensuring that today's brake service is performed correctly and delivers the designed longevity of modern components.

Additionally, we will delve into how Original Equipment Manufacturers (OEMs) are addressing these complex issues, both under warranty and for paid service. The session will also cover specific considerations for Electric Vehicle (EV) brakes and how servicing procedures may evolve in the future.

Workshop-Oriented Practical Fault Diagnosis on Modern Electric Vehicles (hands-on) (S1-5) *by Dirk Niemeyer*
High-voltage (HV) vehicles present new and complex challenges for both trainees and instructors in automotive education. This practical session is designed specifically for automotive instructors to deepen their understanding of typical HV system faults, their causes, and effective diagnostic and repair techniques. Using real hardware demonstrations, participants will experience hands-on fault detection and guided troubleshooting processes that can be directly applied in their classrooms and workshops. By attending, teachers will gain valuable insights, tools, and confidence to better support their students in mastering the technology of modern electric and hybrid vehicles.

Tuesday Sessions:

AI in the Garage: A Strategic Roadmap for the Modern Talent Pipeline (S2-1) *by Jeff Copeland and Shawn Haag*
The presentation will be rebranded as a "Stakeholder Impact Model," and will move the narrative from what AI is to how it solves the specific pain points of recruitment and retention in the Minnesota Model.

Five Pillars of Impact:
1. Benefits to Learners
2. Benefits to Educators
3. Benefits to Administrators
4. Benefits to Industry
5. Shaping the Future

Tuesday Sessions (continued):

Teaching as Performance Art (S2-2) *by Dr. Alex Richards*
Flipped Classroom, Engagement, Learning Styles. Each of these teaching fads proposed different ways of connecting with students. In reality, teaching remains one of the core examples of performative storytelling, and nets the best results when the instructor meets the students where they are at and facilitates their learning; not flipping it, forcing engagement or attention, or insisting that certain learners learn better by "doing" and can't be taught in any other way. So where do we go from here? When our students are distracted, have their knowledge needs met at their fingertips, and could practically write their own training curriculum, what value proposition makes your classroom attractive to them?

At its core, teaching is performance art. So, how do you perform for Automotive students? This presentation will lean on educational research, leveraging current and past tools and techniques, and reinforce the fundamentals of learning from others beyond your own classroom.

Testing Electronics with You as the Student (S2-3 & S3-4) *by James Wilson*
In this class, we will put you in the student seat to test electronics components.
Starting with meter usage and testing relays, then moving various use for Diodes.
Testing transistors are functioning in a circuit. Plus, a few more components.
Finding problems in a circuit so you can help students while they are learning new concepts. Increasing your skills to teach circuits.

Vehicle Communication Diagnostics (S2-4) *by Jason Gloria*
Communication faults can be daunting. What type of fault is it? Where is the fault located? Is it a module or a harness issue? In this course you will first identify the type of network you're working with; CAN bus, LIN bus, FLEXRAY, K-Line. Once identified, you can verify the signal you should be seeing on your scope. We will identify architectures, common voltage amplitudes for testing and overall network integrity testing.

As always, this is a holistic approach using your scan tools, service information, scope, and multimeters to find the fault fast.

Recommended for all levels of technicians.
- Identify the Network
- Test Network Integrity
- Bypass Testing Harness or Module
- Verify and Analyze Communication Signals
- Locating The Fault

o How many different types of network architecture exist in modern vehicles?
o How can you know what good communication looks like?
o Is the scan tool, the scope, or the multimeter the best tool for network diagnostics?
o What information is most helpful when a communication fault is intermittent?

Where Should Voltage Be (and Not Be)? Hands-On Diagnostics and Safety in EV Systems (S2-5 & S3-5) *by Baily Soto*
This advanced training session is designed to teach beyond compliance and into real-world problem-solving. Using the EV-400 High Voltage Safety Trainer, participants will learn where voltage should, and should not, exist in EV systems and why this matters. They will master the use of diagnostic tools such as multimeters to verify component function and system integrity, while exploring built-in safety features and how to confirm their proper operation. The session includes dynamic fault-finding exercises where participants engage in live scenarios with introduced faults, requiring systematic diagnosis and resolution. Throughout the training, theory is connected to practice through hands-on exercises that simulate real-world troubleshooting for instructors seeking practical, interactive methods to teach EV high voltage safety and diagnostics.

2026 AUTOMOTIVE EDUCATOR CONFERENCE (AEC) COURSE DESCRIPTIONS

Tuesday Sessions (continued):

Educator Roundtable: Challenges & Successes in Automotive Education (S3-1) *by Randy Klitzke*
An opportunity to participate in the NACAT Mentor program via an in person format. The session shall include a diverse panel of educators sharing insight on topics ranging secondary and post-secondary automotive programs. Planned topics of discussion to include classroom management, professional development, student engagement, and work/life balance; as well as one or more open topics chosen by participants.

Essential Scope Tests (S3-2) *by Jason Gloria*
This course provides the confidence to take the fear and frustration out of using your oscilloscope. Modern vehicles provide us with multiple communication networks, countless sensors, solenoids, and actuators. Not only do we need a way to test the components themselves, but we also need trusted tests to verify the controllers that monitor and actuate these components.

You will learn essential operations of your Oscilloscope, including set up, signal analysis, common waveforms and tests that can be used on every vehicle you work on. Quick tests for no starts, driveability concerns, communication networks, electric motors, solenoids, actuators, and sensors will also be covered.

This course will prepare you to take your scope to the fender and prove failures without the need for intrusive teardown, lost time, and labor.

Recommended for seasoned and aspiring diagnostic technicians.
- Signal Acquisition
- Current Charging
- Pressure Testing
- Voltage Drop/Loading Circuits
- Starting and Charging System Testing
o Can we diagnose internal engine issues without the confirmation of teardown?
o Does Oscilloscope testing cost us diagnostic time or save us time?
o What information can be learned from pressure testing?
o What can current flow teach us about the health of a component or circuit?

HV Battery Stress Testing - Preparing Students for Real-World Service (S3-3) *by Russ Hutton*
This seminar prepares instructors and students to perform HV battery stress testing as a practical and safe diagnostic service. Participants will learn how to identify battery degradation symptoms, select the correct testing tools, and perform accurate stress tests to assess pack condition. The session also addresses proper replacement techniques, maintenance practices, and the role of thermal management systems in battery longevity.
Through instructor-led demonstrations and real-world examples, attendees will gain the confidence to integrate HV battery service procedures into classroom and shop environments. Emphasis is placed on technician safety, diagnostic accuracy, and developing repeatable service practices aligned with modern hybrid and EV technologies.
Key Topics: HV battery stress testing, failure symptoms, service tools, safe replacement methods, and thermal system maintenance.

Testing Electronics with You as the Student (S2-3 & S3-4) *by James Wilson*
In this class, we will put you in the student seat to test electronics components.
Starting with meter usage and testing relays, then moving various use for Diodes.
Testing transistors are functioning in a circuit. Plus, a few more components.
Finding problems in a circuit so you can help students while they are learning new concepts. Increasing your skills to teach circuits.

Where Should Voltage Be (and Not Be)? Hands-On Diagnostics and Safety in EV Systems (S2-5 & S3-5) *by Baily Soto*
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2026 AUTOMOTIVE EDUCATOR CONFERENCE (AEC) COURSE DESCRIPTIONS

Tuesday Sessions (continued):

BAR Informational Updates (S3-6) *by Matt Mahlke*
Matt will discuss the newest information, regulations, and proposed laws and regulations effecting the automotive industry in California. We also cover the Cars 4 Schools program which gives vehicles to public schools for free to aid in student learning.

Wednesday Sessions:

Essentials of Onboard Diagnostics (hands-on) (S4-1) *by Rick Escalambre*
This workshop will be presented in two parts.

Part I will cover the essential aspects of computer controls within the Input-Process-Output (IPO) model. Regardless of the vehicle or system, all input and output components should be grouped. Understanding the relationship between inputs and outputs is essential to effective diagnostics. Without this knowledge, a scan tool is only a code reader.

Part II will help prepare for the introduction of Onboard Diagnostics on Unified Diagnostic Services (OBDonUDS). By 2027, OBDonUDS will become the Worldwide Harmonized On-Board Diagnostics system for all spark, compression, LD, MD, HD, and Zero-emission vehicles (ZEV). OBDonUDS will require a good working knowledge of CAN Global OBDII. The workshop will cover the CAN Global OBD-II Modes and the Unified Diagnostics Services.

The information presented will be reinforced in the lab through on-car worksheets and the analysis of snapshot case studies of scan tool data.

EV Technology and Repair (hands-on) (S4-2) *by Tom Rayk*
This is a hands on class . EV testing will be demonstrated and practiced. Safety and the use and purpose of meters required to test Hybrid and Ev vehicles will be demonstrated. Course will be taught using live Hybrid and EV mockups. This class will be geared towards instructors. Every instructor should attend.

Automotive Classroom Tips and Tricks (S4-3) *by Randy Klizke*
The Automotive Classroom Tips and Tricks presentation includes a sharing of techniques targeting positive classroom behaviors and student engagement, the creation and use of props for teaching theoretical concepts across a variety of topics through hands-on application, and methods for teaching and assessing (ASE) supplemental tasks in a consistent manner.

Automotive RF Systems: Effective Pedagogy for the Wireless Era (S4-4) *by Cameron Conover*
This session gives automotive instructors a clear, practical approach to teaching RF systems in modern vehicles. We'll cover essential RF principles frequency, wavelength, safety, and antenna behavior, then move into engaging, hands-on methods using software-defined radio and other accessible tools. You'll also see how amateur radio skills support diagnostics and boost student engagement. Attendees leave with ready-to-use demos, teaching strategies, and a stronger grasp of the wireless systems shaping today's automotive technology.

Battery Management Hands on Activity (S4-5) *by Mark Weller*
This is an interactive course that will cover the battery management system (BMS). Familiarity with current electric vehicle terminology is recommended. BMS theory and operation will be introduced followed by building actual systems in several small group settings. This will include building a sample battery pack, wiring the cell taps plus programming and fault testing. There are a limited number of workstations with a laptop. If you want to work on your own Windows based laptop, bring it along.
Upon completion, attendees should be able to:
(1) Describe the function/limitation of the BMS.
(2) Configure the parameters of a BMS.
(3) Diagnose faults and state of health.

Crawl, Walk, Run Instruction and Tactics (S4-6) *by Andy Tirado*
A guide to presentation, teaching and leading methods best practice and pathway creation for guaranteed engagement and results.

2026 AUTOMOTIVE EDUCATOR CONFERENCE (AEC) COURSE DESCRIPTIONS

Wednesday Sessions (continued):

Teach TPMS with Confidence: A Complete Instructor Training Experience (hands-on) (S4-7) *by Sean Lannoo*
Sean Lannoo, Technical Training Manager at Dill Air Controls, offers TPMS training that equips instructors with a clear understanding of tire pressure monitoring system fundamentals to bring back to students in automotive service programs. The course covers sensor types, system operation, service tools, and best-practice maintenance procedures, along with key topics such as TPMS legislation, diagnostics, common failure points, and the differences between sensor programming and relearn procedures. The training includes practical demonstrations using Dill's TPMS tools and components, giving instructors hands-on skills to teach students how to service TPMS systems accurately, improve shop efficiency, and ensure vehicle safety and compliance. Attendees will also receive an instructor training packet filled with classroom resources, along with a few giveaway items.

Building Diagnostic Skills with Electrical Fundamentals and Computer-Controlled Circuits (hands-on) (S5-1) by Scott Hadzik
This session explores effective methods for teaching electrical principles and diagnostics using multimeters and dedicated setboards designed for rapid fault insertion. Attendees will learn strategies for presenting voltage, current, and resistance relationships, while giving students structured practice in diagnosing series, parallel, series-parallel, and computer-controlled circuits. The emphasis will be on creating repeatable training scenarios where faults can be quickly set up, allowing students to build confidence in their troubleshooting skills and apply proven diagnostic processes to modern automotive systems.

Identifying Mechanical Failures Using Electronic Methods (S5-2) *by Chris Hamann*
Join Chris for a hands-on diagnostic session focused on quickly identifying mechanical issues in gasoline engines without any disassembly or even removing spark plugs. In this training, you'll learn how to determine if an engine has sealing or breathing problems and pinpoint affected cylinders in just minutes. Chris will demonstrate two powerful techniques: relative compression testing and cranking vacuum testing, applicable to nearly any gasoline engine. The session will also cover essential tools, proven diagnostic strategies, and real-world case studies to help you confidently troubleshoot engine concerns with speed and accuracy.

Parasitic Battery Drains and Modern Charging Systems for Conventional I.C.E. and Electrified Vehicles (hands-on) (S5-3) *by Dave Hobbs*
Rapid Clicks - Single Click - No Crank. Is there a Phantom battery drain? Defective starter? Or maybe it's a faulty alternator or just time for a new battery? Electrified vehicle? Maybe it's the Big Battery, Motor Generator or Main Contactors? No crank scenarios have been around since Kettering invented the first electric starter leading to the formation of the Dayton Engineering Laboratory Co. (DELCO) over 100 years ago. With today's confusing mix of I.C.E. only (with & w/o auto stop), MHEV, Full HEV, PHEV and BEV vehicles sharing the road today, the problems, diagnostic methods, and the repair solutions have evolved. Delphi's Dave Hobbs will update you on using the latest tools (meters, scopes, thermal imagers, shunt resistors, etc.) and techniques to diagnose battery drains and charging system problems. Don't let evolving technology run you down - keep your training skills charged up with this in-depth hands-on real-world class.

Solving the ADAS Information Gap (S5-4) *by Andy Tirado*
This course will provide attendees with an in-depth and accurate understanding of modern ADAS systems and direct them towards solutions for accessing data, support, and classroom content. This approach is not brand-affiliated and will examine ADAS, along with its challenges, to accurately approach this field and implement it in the classroom, schools, and shops. What are the best options for their real estate, career opportunities, and development, and how can they access the necessary information on a global scale to ensure guaranteed success and continued growth in the ADAS space?

Utilizing AI Resources for Automotive Instructors and Students (S5-5) *by Steve Berger*
AI is already showing up in today's classrooms and shops—are you ready to use it effectively and responsibly? This hands-on session is designed specifically for automotive educators who want practical ways to use AI to save time, improve instruction, and help students build stronger documentation and communication skills.

Participants will see real-world demonstrations of AI-assisted lesson planning, assignment and rubric creation, and grading support, then work collaboratively to build ready-to-use materials they can take back to their programs. The session also addresses common concerns such as plagiarism, accuracy, and over-reliance, with clear strategies to keep AI working for learning—not replacing it.

Bring your laptop. If you want practical tools, ethical guidance, and immediate classroom takeaways, this is a session you won't want to miss.

2026 AUTOMOTIVE EDUCATOR CONFERENCE (AEC) COURSE DESCRIPTIONS

Thursday Sessions:

Building an Electric Drivetrain in the Classroom (hands-on) (S6-1) *by Jozef Antolin*
Attendees will gain valuable experience building & configuring an electric drive train from the ground up on a test bench.

Key Topics Covered:
- Electric systems design (battery, motor, component placement - mimicking real world OEM's)
- Introduction to high voltage safety (procedures, equipment, and components)
- Creating various types of pin connectors from 2 pins to 8 pins
- Battery pack assembly (parallel vs series) and installing a Battery Management System
- Motor control configuration with throttle mapping and regenerative braking
- Learning to read, understand, and implement wiring schematics into a build
- Troubleshooting and fault detection

Unveiling Future Technology: Tesla Cybertruck - Technology Overview - Diagnostics and More! (hands-on) (S6-2) *by Scott Brown*
Join us for an in-depth exploration of the Tesla Cybertruck's groundbreaking technologies. This session will include live, hands-on demonstration and analysis of the following systems:

* 48V Mid Voltage System: Understanding how the transition from traditional 12V to a 48V system enhances efficiency and reduces vehicle weight through thinner wiring and less copper usage. We'll discuss the practical implications for vehicle electronics and component design.

* 800V High Voltage Architecture: We'll cover the benefits of this high-voltage system, from faster charging capabilities to improved power distribution and efficiency within the vehicle.

* Steer by Wire: Learn about the first fully steer-by-wire system in a production vehicle, examining how it removes mechanical links between the steering wheel and the wheels, offering new possibilities in vehicle maneuverability and safety.

* Four Wheel Steering: An examination of how this feature enhances the Cybertruck's agility and handling at both low and high speeds

* Etherloop Communications: Explore Tesla's innovative approach to vehicle networking, reducing wiring complexity and improving data transmission speeds across vehicle systems.

* Diagnostics and Tesla Toolbox: We'll introduce the Tesla Diagnostics Toolbox, which provides mechanics and technicians with real-time diagnostics and troubleshooting capabilities. The session includes a case study using Tesla's toolbox/sandbox, demonstrating practical applications for vehicle maintenance and repair.

* Remote Vehicle Access: Discuss how Tesla's remote access features integrate with diagnostics and vehicle management, providing insights into future automotive service trends.

* Live Vehicle Data Analysis: Participants will get hands-on experience with live data from the Cybertruck, focusing on power analysis of the front drive unit and CAN data analysis. This segment will highlight the intricacies of electric vehicle performance and diagnostics.

Vehicle Communications for Subaru Vehicles (hands-on) (S6-3) *by Luis Perez and Laura Hardy-Wilcox*
This training course will provide an overview (operation & diagnosis) of the Vehicle Communications Network for Subaru vehicles up to and including 2025. This course will allow the students to be able to identify the reasons for, and construction of Subaru LAN systems and strategies used to test them.
- Identify at least three benefits of using LAN in a Subaru vehicle
- Identify the 4 main LAN system configurations
- Identify the types of communication protocols used on various Subaru vehicles

2026 AUTOMOTIVE EDUCATOR CONFERENCE (AEC) COURSE DESCRIPTIONS

Thursday Sessions (continued):

An In-Depth Look at the Ford 10R80 Transmission (S6-4) *by Keith Clark*

With the complexity that comes with today's vehicles, diagnosing transmission-related complaints becomes difficult. Understanding how the transmission is controlled is necessary to find and correct root-cause problems, inside or outside, that produce undesirable unit operation. This course is a deep dive into the 10R80 transmission from theory and operation to diagnostics, highlighting power flow, powertrain control strategy, shift anatomy, and in-shop diagnostic strategies. The material is designed to provide the diagnostician with strategic insight to develop a comprehensive path for resolving driveability issues related to transmission operation.

Building a Successful Automotive Program Outside the Classroom (S6-5) *by Aaron Klesick*

A thriving automotive program doesn't stop at classroom instruction it extends into the community, local industry, and the opportunities created beyond the shop doors. In this interactive session, participants will explore proven strategies and real-world practices that strengthen automotive programs through engagement, partnerships, and professional collaboration.

Drawing on Aaron's extensive experience in event planning, fundraising, program leadership, and his background as an industry technician, service advisor, and manager, this session dives deep into the outside-the-classroom elements that drive program success. From building meaningful advisory committees to planning impactful career fairs and fostering long-term business relationships, attendees will gain actionable tools to take their programs to the next level.

Learning Objectives:

By the end of this session, participants will be able to:

1. Identify key components that make an automotive program thrive beyond classroom instruction.
2. Develop strategies for building strong partnerships with local industry and community stakeholders.
3. Plan and execute events such as career fairs, advisory committee meetings, and student showcases that enhance engagement.
4. Implement effective fundraising and outreach techniques to support program growth.
5. Create an action plan to strengthen their programs visibility, sustainability, and student success.
6. Learn about best practices around ASE Education Foundation Accreditation.

Hands-On CAN: Live Scope Traces, Faults, and DIY Classroom Tools (S6-6) *by Cameron Conover*

This live session puts a functioning CAN bus on the bench and lets you watch real network behavior as faults are introduced in real time. Using a PicoScope with PicoScope 7 software, we'll break down arbitration, bit timing, dominant/recessive signaling, and how the waveform shifts under various faults. You'll see exactly what happens on the physical layer when a module drops out, a termination fails, or a line is compromised. We'll also cover affordable, DIY-friendly setups for creating your own classroom CAN demos, including low-cost nodes, fault-insertion methods, and simple ways to replicate the scope captures students should be learning from. If you want a clear, high-resolution look at what CAN really does on the wire, this session delivers.

Systematic Approach to Teaching Ignition System Essentials (S6-7) *by Rick Escalambre*

The ignition system is one of the three essential components for proper engine operation. What are the requirements for a properly operating system? What do the systems have in common? What makes them unique? This workshop will cover common principles and testing for ignition-related concerns.

Current Trends in Mobile Climate Systems (S7-1) *by Scott Norman*

This training will cover current trends in mobile climate systems and how to teach students to diagnose complex problems in the A/C system. Topics will include: the future of refrigerants, thermal management systems, variable displacement compressors, TXV operation and diagnostics, and diagnosing complex A/C problems like restrictions in the refrigerant loop of the HVAC system.

Engine Sealing (S7-2) by Chuck Lynch

This course provides an in-depth exploration of engine sealing technologies essential for modern powertrain performance and reliability. Participants will learn the design principles and functional roles of key sealing components, including rotating shaft seals, head gaskets, and form-in-place gaskets.

As engine technology has evolved, so have sealing requirements. Today's engines feature forced induction systems, extended oil drain intervals, and operate with high-ethanol fuel factors that demand advanced sealing solutions to withstand increased pressures, temperatures, and chemical exposure.

Through a combination of theory and practical insights, this course equips learners with the knowledge to understand material selection, sealing strategies, and failure prevention in contemporary engine designs.

Key Topics: Fundamentals of sealing technology and its role in engine performance, Rotating shaft seals: design, function, and durability considerations, Head gaskets and form-in-place gaskets: applications and innovations, Impact of forced induction, extended oil intervals, and ethanol-based fuels on sealing systems, Common failure modes and diagnostic techniques

Thursday Sessions (continued):

Incorporating High-Voltage Electrical into an Existing Curriculum (S7-3) *by Curt Ward*

This class is for the instructor that wants to know more about integrating high-voltage electrical into an existing curriculum. Integration strategies that do and do not include the use of a high voltage battery in the classroom/ laboratory will be discussed. Topics that will be covered include safety, AC/DC electricity, Ohms law, isolation testing, heavy-duty relays and more. Modifiable task sheets will be part of the presentation.

Mastering the uScope: Hands-On Diagnostics for Real-World Results (S7-4) *by Tom Broxholm*

Experience the power of the AESWave uScope through a fully hands-on diagnostic workshop. Each participant will operate their own uScope as simulated sensor signals are transmitted in real time. Learn how to capture and navigate, waveforms for quick and accurate interpretation using best-practice techniques. From basic operation to advanced signal capture, you'll gain the confidence to apply uScope diagnostics efficiently in the shop or classroom.