| **A5 Brakes** |
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| * Rotor machining on and off car
* Runout and parallelism
* Booster replacement and adjustment
* Special Toyota systems (TRAC, ABS, VSC, VDIM, hydraulic booster/master, etc.)
* Fluid contamination
* Safety (dust)
* What’s a proper brake job?
* Proper lubricant use: what not to grease
* Shims
* Brake fluid exchange
* Adjustment
* Parking brake
* Internal p-brake calipers
* Hydraulic theory
* Thermodynamics (1st law only)
* Torque (again)
* How to bleed -with Techstream
* Measure pad and rotor thickness
* Legal and customer service consequences when incorrect info in listed on the RO
* How to properly install new pads in their correct position
* Floating vs. fixed calipers
* Caliper function basics
* Brake booster to master cylinder push rod adjustment (use tool)
* How to hook up brake pressure SST
* Physics behind brake squeal
* ABS and VSC diagnosis
* Wheel speed sensor failures - damage to sensors can occur during wheel bearing replacement
* Do not let caliper hang from the hose
* Understand electronics in brake system
 | * Why on car cut is better than bench lathe
* VSC/ABS electrical diagnosis
* Pedal checks – height, hard/soft, free play, and pulsation- front or rear?
* Low/hard brake pedal diagnosis
* Proper use of equipment – use right tool for the job
* Brake pull vs. tire pull
* Use of chassis ears
* Diagnose uneven pad wear
* Diagnose and understand how front/rear wheel bearings effect braking
* Phase matching rotors to the hubs
* Differences in brake compounds
* Understanding Specs
* Using measuring tools, micrometers, dial indicator, drum micrometer
* Rotor and drum removal
* Master cylinder replacement and adjustment
* Overhaul
* Fluid leak inspection
* Fluid type and colors
* LSPV set up
* Brake squeak diagnosis
* Aftermarket vs. factory
* Primary and secondary shoes
* ABS self-check diagnosis
* Hydraulic and electric brake differences (hybrid)
* Older ABS systems/Booster systems
* Code retrievals/clearing
* Techstream/active test, Data list
* Speed sensor diagnosis/installation, oscilloscope
* Bearing preload
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| **A6 Electrical/Electronic Systems** |
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| * Voltage drop
* Ohm’s law
* Circuit laws
* Circuit analysis
* DVOM training
* Battery/starting/charging testing (GR8 and 150)
* Exposure to Digital Storage Oscilloscope (DSO)
* Ignition system
* Techstream (901)
* Datastream
* 6-step process (integrated in every course)
* SRS service and safety
* Battery replacement and initialization
* No test lights
* Understand difference between aftermarket PIO and DIO accessories
* importance of visual inspection
* Where to go to find out more information
* Know your product as it could be a normal condition product characteristics
* Understanding of immobilizer systems
* Understand pin fit
* How water leaks create issues e.g. windshield replacements
* Reading EWD; including acronyms and symbols
* Develop and use critical thinking, specifically for EWD
 | * Window motor pinch protection
* Jump start: cranking hold, smart key, hybrids
* Short circuits/Open circuits
* Multiplex communications, BEAN, CAN, LIN, AVC/LAN, MOST
* NAV systems
* Rear seat entertainment systems
* Wireless headsets, Bluetooth
* Seat heater, including R&R seat covers
* Sun roofs
* Interior Panel R&R
* Electrical safety
* Hybrid safety basics
* EWD knowledge, TIS and paper copy
* Current flow tracing
* Know where fuse boxes are located
* Disassembly procedure (junction box)
* Connector repair/basic checks
* Back probing
* Ignition testing
* Key programming
* Smart Key functions
* Waterproofing for external wiring repairs
* Customer quality control
* Listening Skills
* Wiring harness repair
* Parasitic draw analysis
* ECU Initialization
* Terminals ECU
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