| **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 |

| **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 |