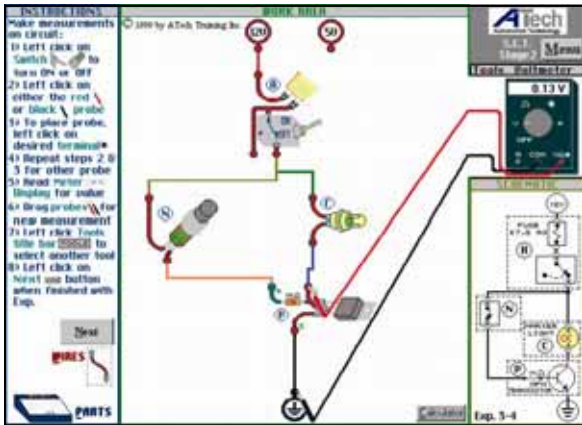
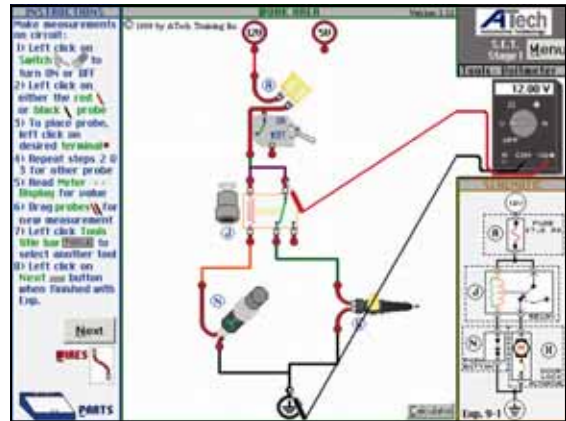


**ATech Invitational Workshop  
Electrical/Electronics and OBD II  
Meets NATEF Annual 20 Hour Industry Update Training**

**“Hands-On” Electrical/Electronic Diagnostics– 10 Hours**



Voltage Measurement from S.E.T. Stage 2



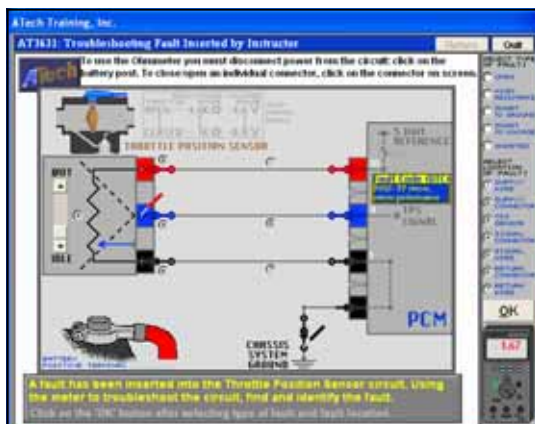
Troubleshooting Practice Program

ATech Training, Inc. is offering a “Hands-On” Electrical/Electronic Troubleshooting and OBD II workshop at our facility in Walton, Kentucky. Laptop computers and ATech 3600 Engine Performance Troubleshooting Trainers are provided at each work station.

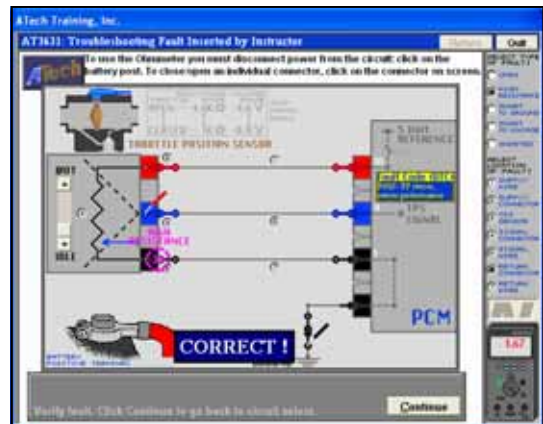
Each participant will build and troubleshoot virtual circuits utilizing ATech’s Virtual S.E.T. Program. Also, troubleshooting techniques of Engine Control systems will be discussed and participants will troubleshoot malfunctioning circuits. A final troubleshooting contest will be held with AutoTap Scan Tools awarded to the winning team.

**Electrical/Electronics Program Agenda**

1. Investigation of Circuit Characteristics using all three stages of the General Motors S.E.T. program.
2. Basic/Intermediate troubleshooting skill development with the troubleshooter program.
3. Class fault diagnosis through directed measurements and discussions.
4. Individual diagnosis of 15 faults of the Throttle Position Sensor circuit using Scan Tool readout and voltage readings.
5. Intermediate/Advanced troubleshooting practice of the typical Engine Control System.
6. Troubleshooting Contest.
7. Troubleshooting Contest Winners Presentation.



Troubleshooting TPS Circuit



Problem Correctly Diagnosed

## “Hands-On” OBD II Training– 11 Hours



### GM OBD II Training

The primary focus of this session of the workshop is to allow participants an opportunity to observe a completely operational OBD II system (no fault codes) in an educational setting. The emphasis is on understanding system component relationships, for example—oxygen sensor and fuel trim, EGR and fuel trim. Additional discussion will relate to teaching and presentation techniques.

Each work station will have an OBD II engine control system demonstrator and a Laptop PC Scan Tool. Participants will:

- Perform a “drive cycle” and complete all OBD II monitors at their work station.
- Take control of the fuel control oxygen sensor signal in a closed loop system and observe the effects on short term fuel trim, long term fuel trim and injector pulse width.
- Study MAP sensor and oxygen sensor output signal changes in response to OBD II EGR monitor operation during drive cycle coast down.
- Cause DTCs in the system and then use the Scan Tool to read DTCs and Freeze Frame.
- Use the Scan Tool to clear DTCs.
- Pull Mode 6 data after drive cycle completion.
- Perform a Catalytic Convertor “Punch-Thru”.
- Use bidirectional control and observe effects.
- Observe PCM vehicle speed control.
- Demonstrate and control PCM “choke” operation.
- Receive Books and Software valued over \$1,000.
- Receive Framed Completion Certificate.



**Automotive Technology**

**A Tech Training, Inc.**

**12290 Chandler Drive • Walton, KY 41094**

**Ph: 859-485-7229 • Fax: 859-485-7299**

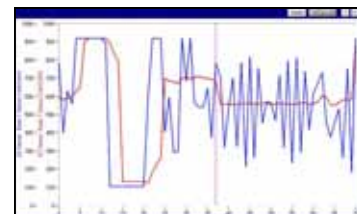
**www.atechtraining.com**



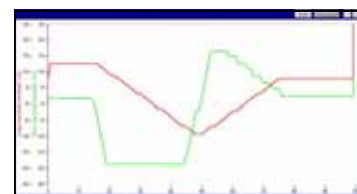
Laptop Scan Tool Display Capabilities

### OBD II Program Agenda

1. System Hardware
2. Comprehensive Component Monitoring
3. Rationality Checks
4. System Status Flags
5. Intrusive Oxygen Sensor Testing
6. Non-Intrusive Oxygen Sensor Testing
7. DTC Types
8. Data Format Definition
9. Drive Cycle
10. Ford 2000 Drive Cycle
11. Catalytic Convertor OBD II Monitor
12. Intrusive CAT Test
13. CAT Monitor Frequency Amplitude Relationship
14. Emission Levels during “Lean Punch-Thru”
15. Emission Levels during “Rich Punch-Thru”
16. Short Term Fuel Trim
17. Short Term/Long Term Fuel Trim Relationship
18. EGR Check with MAP
19. EGR Check with Short Term Fuel Trim
20. EGR Check with DPFE
21. Misfire
22. Knock Sensor
23. Evaporative Systems
24. Freeze Frame Data
25. MIL Illumination
26. TWC Text Count
27. EGR Test Count
28. Bidirectional Control
29. Mode 6 Investigation
30. CAT Convertor Temperature Control
31. Enhanced Evaporative Systems
32. MAF, Engine Load, and Injector Pulse Width



CAT “Punch-Thru”  
On AutoTap



Short/Long Term FT  
On AutoTap