



# eAir REPAIR



## eAirRepair Newsletter

January 2012

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## 2012 Seminars

All seminars are sponsored by the Illinois EPA for the repair industry, and they are free!

### Logical Diagnostics

Presented by: Scot Manna

Determining the “root cause” of a failure and finding it in the shortest possible time is one of the most challenging jobs for a driveability technician. Through actual case study analysis this class will engage the attendees in discussion on what is the most logical path to repair a problem vehicle. Determining the possible causes and the next step in testing is the point in each of the vehicle problems presented in the case studies. The goal is to sharpen your diagnostic skills and make your troubleshooting technique logical.

Date / Time	Location
January 30, 2012 (Monday) 6:00 pm - 10:00 pm	College of DuPage 425 Fawell Blvd Glen Ellyn IL 60137
February 08, 2012 (Wednesday) 6:00 pm - 10:00 pm	Moraine Valley Community College 9000 W College Pkwy Palos Hills IL 60465
March 15, 2012 (Thursday) 6:00 pm - 10:00 pm	Joliet Junior College 1215 Houbolt Road Joliet IL 60431

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### January Seminars

[Logical Diagnostics](#)

January 30, 2012 (Monday)

[Computers, Information, and  
Access... to SUCCESS!](#)

January 31, 2012 (Tuesday)

### Share Your Tips

Email your tips or case studies

to: [EPA.Repair.Outreach@illinois.gov](mailto:EPA.Repair.Outreach@illinois.gov)

**April 26, 2012 (Thursday)**  
6:00 pm - 10:00 pm

**Oakton Community College**  
1600 East Golf Road  
Des Plaines IL 60016

**May 09, 2012 (Wednesday)**  
6:00 pm - 10:00 pm

**Morton College**  
3801 S Central Ave  
Cicero IL 60804

**September 19, 2012 (Wednesday)**  
6:00 pm - 10:00 pm

**College of Lake County**  
19351 W Washington St  
Grayslake IL 60030

**October 16, 2012 (Tuesday)**  
6:00 pm - 10:00 pm

**State of Illinois**  
Regional Headquarters Complex  
1100 Eastport Plaza  
Collinsville IL 62234

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## Computers, Information, and Access... to SUCCESS!

Presented by: Scott Shotton

Technicians, service writers and owners, don't pass this up! Technology, different job titles and different job responsibilities make today's automotive workplace a harsh environment. Communication is essential in the automotive repair industry today. This class was established to offer the best information available to owners, service writers and technicians to make day-to-day business productive. The dashboard, OE sites, free references, etc. will be covered. There will be time for conversations about individual situations, in fact it is encouraged. You will leave with valuable knowledge for your business.

Date / Time	Location
<b>January 31, 2012 (Tuesday)</b> 6:00 pm - 10:00 pm	<b>Truman College</b> 1145 West Wilson Ave Chicago IL 60640
<b>November 20, 2012 (Tuesday)</b> 6:00 pm - 10:00 pm	<b>Morton College</b> 3801 S Central Ave Cicero IL 60804

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## Mechanical Testing Diagnosis

Presented by: John Thornton

Using a case-study format, a wide variety of diagnostic techniques used to diagnose check engine lamp complaints on late model Asian vehicles will be discussed. DTC concerns to be covered include misfire, fuel trim, cam timing, evaporative systems, and much more. Scan tools, scopes, gas analyzers, and service information are some of the tools which will be incorporated into each of the case studies. The attending technician will be shown how to diagnose common, and not so common, MIL issues on Asian vehicles. A detailed handout supporting the discussion will be provided.

<b>Date / Time</b>	<b>Location</b>
<b>February 02, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>Morton College 3801 S Central Ave Cicero IL 60804</b>
<b>March 22, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>Oakton Community College 1600 East Golf Road Des Plaines IL 60016</b>
<b>April 19, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>Moraine Valley Community College 9000 W College Pkwy Palos Hills IL 60465</b>
<b>May 17, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>College of DuPage 425 Fawell Blvd Glen Ellyn IL 60137</b>
<b>August 16, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>College of Lake County 19351 W Washington St Grayslake IL 60030</b>
<b>September 06, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>Joliet Junior College 1215 Houbolt Road Joliet IL 60431</b>
<b>October 18, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>Truman College 1145 West Wilson Ave Chicago IL 60640</b>

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## **Introduction to Digital Storage Oscilloscopes**

**Presented by: Scott Shotton**

When tackling emissions failures, scan tools are the tools that we should always use first. However, DSO's are a valuable tool when it comes time to diagnose a system or component. This class will address the value of a DSO as a tool. Scope principles such as voltage, time, trigger, slope, and more will be discussed. Breaking down waveforms from common inputs and outputs for usable diagnostic purposes will be addressed. Ignition, fuels delivery, and more will be covered.

- Master the basics of voltage, time, trigger, etc.
- Learn proper scope setup for accurate pattern acquisition
- Get baseline starting points for capturing specific waveforms
- Learn to analyze waveforms from multiple components
- Be able to use this new knowledge to make diagnostic decisions

Date / Time	Location
February 07, 2012 (Tuesday) 6:00 pm - 10:00 pm	Oakton Community College 1600 East Golf Road Des Plaines IL 60016
February 21, 2012 (Tuesday) 6:00 pm - 10:00 pm	Joliet Junior College 1215 Houbolt Road Joliet IL 60431
March 20, 2012 (Tuesday) 6:00 pm - 10:00 pm	College of DuPage 425 Fawell Blvd Glen Ellyn IL 60137
April 17, 2012 (Tuesday) 6:00 pm - 10:00 pm	Morton College 3801 S Central Ave Cicero IL 60804
May 08, 2012 (Tuesday) 6:00 pm - 10:00 pm	Truman College 1145 West Wilson Ave Chicago IL 60640

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## Part I – Top 20 DTCs Diagnosis

Presented by: Ken Zanders

This seminar will address the top Illinois codes, offering unique suggestions for interpreting and ultimately repairing these faults. It serves as an introduction to using what is called the "descriptor" when dealing with the various codes and the characteristics of the systems you are working on. This seminar will serve as a great introduction to the base understanding of the more advanced systems that will enter many shops in the very near future. This is a must attend seminar for the serious emissions specialist.

**Date / Time****Location**

**February 14, 2012 (Tuesday)**  
**6:00 pm - 10:00 pm**

**Truman College**  
**1145 West Wilson Ave**  
**Chicago IL 60640**

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## Evaporative Emissions Techniques-Domestics

Presented by: Ken Zanders

This seminar revisits diagnostic techniques for EVAP systems. The presentation will address unique testing techniques for domestic products, and it serves as a review of techniques previously discussed. A special hands-on session may be available for those who wish to attend as a follow up to this presentation. It is highly recommended.

**Date / Time****Location**

**February 15, 2012 (Wednesday)**  
**6:00 pm - 10:00 pm**

**College of Lake County**  
**19351 W Washington St**  
**Grayslake IL 60030**

**February 22, 2012 (Wednesday)**  
**6:00 pm - 10:00 pm**

**College of DuPage**  
**425 Fawell Blvd**  
**Glen Ellyn IL 60137**

**June 14, 2012 (Thursday)**  
**6:00 pm - 10:00 pm**

**State of Illinois**  
**Regional Headquarters Complex**  
**1100 Eastport Plaza**  
**Collinsville IL 62234**

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## Evaporative Emissions Workshop I

Presented by: Ken Zanders

This hands-on workshop for technicians is a follow up session to the Evaporative Emissions Technique Seminar. Attending that lecture session first is highly recommended before this hands-on session. The workshop will address GM, Ford and Chrysler systems.

**Space is very limited and will be on a first sign up basis.**  
**This workshop will be on Saturday from approx. 9am-3pm.**

**Date / Time****Location**

**March 03, 2012 (Saturday)**  
**9:00 am - 3:00 pm**

**Triton College**  
**2000 Fifth Ave**  
**River Grove IL 60171**

**March 17, 2012 (Saturday)**  
**9:00 am - 3:00 pm**

**Triton College**  
**2000 Fifth Ave**  
**River Grove IL 60171**

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## **Readiness Monitor Challenges**

**Presented by: Scot Manna**

This seminar will address the problem of OBD emissions test rejects due to monitor status being "not ready." First retest rejects count against a shop's grade, so making sure monitors run to completion is critical. Case studies of vehicles with difficult to set monitors will be studied. A strategy for addressing vehicles that won't run monitors will be discussed, along with using scan tools and Mode 6 to help determine a solution to this often challenging problem. Vehicles that won't run monitors can be one of the most difficult diagnostic challenges a technician may face. This is a critical class to attend.

<b>Date / Time</b>	<b>Location</b>
<b>March 14, 2012 (Wednesday)</b> <b>6:00 pm - 10:00 pm</b>	<b>Truman College</b> <b>1145 West Wilson Ave</b> <b>Chicago IL 60640</b>
<b>April 04, 2012 (Wednesday)</b> <b>6:00 pm - 10:00 pm</b>	<b>College of Lake County</b> <b>19351 W Washington St</b> <b>Grayslake IL 60030</b>

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## **Gasoline Direct Injection Technology**

**Presented by: Scot Manna**

This class will introduce this new fuel system technology. Gasoline direct injection is the latest development in fuel delivery systems for gasoline engines and promises greater fuel economy, lower emissions, and improved performance. The key components of this system will be discussed and how these components differ from current port fuel injection systems. Scan data analysis and component waveform testing with labsopes will be discussed. Current production engines from GM, Ford and Hyundai will be highlighted.

<b>April 24, 2012 (Tuesday)</b> 6:00 pm - 10:00 pm	<b>College of DuPage</b> 425 Fawell Blvd Glen Ellyn IL 60137
<b>May 30, 2012 (Wednesday)</b> 6:00 pm - 10:00 pm	<b>Oakton Community College</b> 1600 East Golf Road Des Plaines IL 60016
<b>August 22, 2012 (Wednesday)</b> 6:00 pm - 10:00 pm	<b>Joliet Junior College</b> 1215 Houbolt Road Joliet IL 60431
<b>September 17, 2012 (Monday)</b> 6:00 pm - 10:00 pm	<b>Moraine Valley Community College</b> 9000 W College Pkwy Palos Hills IL 60465
<b>October 29, 2012 (Monday)</b> 6:00 pm - 10:00 pm	<b>College of Lake County</b> 19351 W Washington St Grayslake IL 60030

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## Part II – Top 20 DTCs Diagnosis

Presented by: Ken Zanders

This seminar is a continuation of the previous one and will address additional codes that fall within the top EPA code category. This seminar will provide a suggested approach for dealing with the top EPA codes. This presentation will outline in detail each code definition and unique ways to address each one. A series of case studies will be provided as examples.

<b>Date / Time</b>	<b>Location</b>
<b>March 05, 2012 (Monday)</b> 6:00 pm - 10:00 pm	<b>Moraine Valley Community College</b> 9000 W College Pkwy Palos Hills IL 60465
<b>April 10, 2012 (Tuesday)</b> 6:00 pm - 10:00 pm	<b>Truman College</b> 1145 West Wilson Ave Chicago IL 60640
<b>May 14, 2012 (Monday)</b> 6:00 pm - 10:00 pm	<b>College of Lake County</b> 19351 W Washington St Grayslake IL 60030
<b>June 11, 2012 (Monday)</b> 6:00 pm - 10:00 pm	<b>Morton College</b> 3801 S Central Ave Cicero IL 60804

**June 13, 2012 (Wednesday)**  
6:00 pm - 10:00 pm

**State of Illinois**  
**Regional Headquarters Complex**  
1100 Eastport Plaza  
Collinsville IL 62234

**September 10, 2012 (Monday)**  
6:00 pm - 10:00 pm

**College of DuPage**  
425 Fawell Blvd  
Glen Ellyn IL 60137

**October 15, 2012 (Monday)**  
6:00 pm - 10:00 pm

**Oakton Community College**  
1600 East Golf Road  
Des Plaines IL 60016

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## Communication on my Scan Tool?

Presented by: Ken Zanders

This seminar will take a look at various protocols used on various makes and models. The ultimate goal is to address the no communication failures as identified by the Illinois EPA. This seminar also offers an opportunity to learn about the newest communication issues on new vehicle products. A suggested procedure will be offered to assist in addressing these failures in a generic format to promote a better understanding of these systems.

Date / Time	Location
<b>March 12, 2012 (Monday)</b> 6:00 pm - 10:00 pm	<b>College of Lake County</b> 19351 W Washington St Grayslake IL 60030
<b>May 21, 2012 (Monday)</b> 6:00 pm - 10:00 pm	<b>Morton College</b> 3801 S Central Ave Cicero IL 60804

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## Using Mode \$06 Data for OBD Diagnosis and Repair

Presented by: Scott Shotton

Monitors are the key to OBD Emissions testing success. Mode \$06 displays the monitor's results beyond a simple pass or fail. Using Mode \$06 data can expedite some emissions repairs and can even diagnosis of some readiness rejects possible. This class starts with a brief overview of Mode \$06 data and how to decipher its meaning. Time will be spent on the do's and don'ts including the grey areas of invalid data. Many actual vehicle case studies will be used to illustrate the practical applications of using Mode \$06 data for successful OBD diagnosis and repair. Different scan tools and information resources will also be discussed.

<b>Date / Time</b>	<b>Location</b>
<b>May 22, 2012 (Tuesday) 6:00 pm - 10:00 pm</b>	<b>Joliet Junior College 1215 Houbolt Road Joliet IL 60431</b>
<b>June 19, 2012 (Tuesday) 6:00 pm - 10:00 pm</b>	<b>College of DuPage 425 Fawell Blvd Glen Ellyn IL 60137</b>
<b>August 02, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>State of Illinois Regional Headquarters Complex 1100 Eastport Plaza Collinsville IL 62234</b>
<b>September 25, 2012 (Tuesday) 6:00 pm - 10:00 pm</b>	<b>Oakton Community College 1600 East Golf Road Des Plaines IL 60016</b>
<b>October 30, 2012 (Tuesday) 6:00 pm - 10:00 pm</b>	<b>Moraine Valley Community College 9000 W College Pkwy Palos Hills IL 60465</b>
<b>December 18, 2012 (Tuesday) 6:00 pm - 10:00 pm</b>	<b>Morton College 3801 S Central Ave Cicero IL 60804</b>

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## **Fuel System Testing: Basic to Advanced**

**Presented by: Scott Shotton**

Emissions failures often boil down to a system, or component, that is causing the actual fault. Testing beyond the trouble code requires additional tests. This class will focus on testing techniques that pertain to the fuel system. This class starts with basic fuel pressure/volume tests and progresses through fuel pump current analysis and ends with more advanced techniques including exhaust gas analysis. Pro's and con's of all of the available tests will be discussed.

- Learn how to test the fuel delivery system with a variety of tools and techniques.
- Learn available injector testing methods.
- Correctly obtain test results and interpret them effectively.
- Be able to use this knowledge to make diagnostic decisions.

Date / Time	Location
<b>August 01, 2012 (Wednesday)</b> 6:00 pm - 10:00 pm	<b>State of Illinois</b> <b>Regional Headquarters Complex</b> 1100 Eastport Plaza Collinsville IL 62234
<b>August 07, 2012 (Tuesday)</b> 6:00 pm - 10:00 pm	<b>Moraine Valley</b> <b>Community College</b> 9000 W College Pkwy Palos Hills IL 60465
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<b>October 23, 2012 (Tuesday)</b> 6:00 pm - 10:00 pm	<b>College of DuPage</b> 425 Fawell Blvd Glen Ellyn IL 60137
<b>December 11, 2012 (Tuesday)</b> 6:00 pm - 10:00 pm	<b>Joliet Junior College</b> 1215 Houbolt Road Joliet IL 60431

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## Real World Scope Testing

Presented by: Scot Manna

This class will explore the use of labsopes in the shop for everyday testing. The wide range of tests that can be performed using a scope along with the right accessories is incredible. Using case studies, this class will demonstrate why a scope should be used every day. Most shops use their scopes sparingly and seem to reserve them for the lead driveability technician on the more difficult vehicle problems. This lack of use diminishes the return on investment and prevents the technician from becoming a “power user”. Scope features, testing techniques, accessories, and hook-ups will be discussed. The technician attending this class will see why they should be scope testing every day.

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<b>August 09, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>College of DuPage 425 Fawell Blvd Glen Ellyn IL 60137</b>
<b>September 04, 2012 (Tuesday) 6:00 pm - 10:00 pm</b>	<b>Moraine Valley Community College 9000 W College Pkwy Palos Hills IL 60465</b>
<b>October 17, 2012 (Wednesday) 6:00 pm - 10:00 pm</b>	<b>State of Illinois Regional Headquarters Complex 1100 Eastport Plaza Collinsville IL 62234</b>
<b>October 24, 2012 (Wednesday) 6:00 pm - 10:00 pm</b>	<b>Morton College 3801 S Central Ave Cicero IL 60804</b>
<b>November 07, 2012 (Wednesday) 6:00 pm - 10:00 pm</b>	<b>Truman College 1145 West Wilson Ave Chicago IL 60640</b>
<b>November 08, 2012 (Thursday) 6:00 pm - 10:00 pm</b>	<b>Joliet Junior College 1215 Houbolt Road Joliet IL 60431</b>
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<b>December 19, 2012 (Wednesday) 6:00 pm - 10:00 pm</b>	<b>Oakton Community College 1600 East Golf Road Des Plaines IL 60016</b>

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## **Variable Valve Timing**

**Presented by: Ken Zanders**

This seminar will introduce some of the latest engine technologies. The cam phasor design will be discussed and referenced to emission related concerns. This presentation will address domestic applications. A series of case studies will be provided to aid in the understanding of these systems. This seminar is for the serious driveability technician.

<b>Date / Time</b>	<b>Location</b>
<b>August 13, 2012 (Monday) 6:00 pm - 10:00 pm</b>	<b>Morton College 3801 S Central Ave Cicero IL 60804</b>
<b>September 24, 2012 (Monday) 6:00 pm - 10:00 pm</b>	<b>Truman College 1145 West Wilson Ave Chicago IL 60640</b>
<b>October 03, 2012 (Wednesday) 6:00 pm - 10:00 pm</b>	<b>Joliet Junior College 1215 Houbolt Road Joliet IL 60431</b>
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<b>December 03, 2012 (Monday) 6:00 pm - 10:00 pm</b>	<b>College of DuPage 425 Fawell Blvd Glen Ellyn IL 60137</b>
<b>December 04, 2012 (Tuesday) 6:00 pm - 10:00 pm</b>	<b>Moraine Valley Community College 9000 W College Pkwy Palos Hills IL 60465</b>

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