



FUNDAMENTALS OF

# Automotive Technology Online

**CDX** Learning Systems™

## Find and Use Diagnostic Scenarios

*Instructor & Student Training Series*

## Topics covered in this tutorial:

- How to find and use diagnostic scenarios in your CDX courses.

### Need further instruction?

Visit <http://www.cdxauto.com/TrainingLibrary>

### Need support?

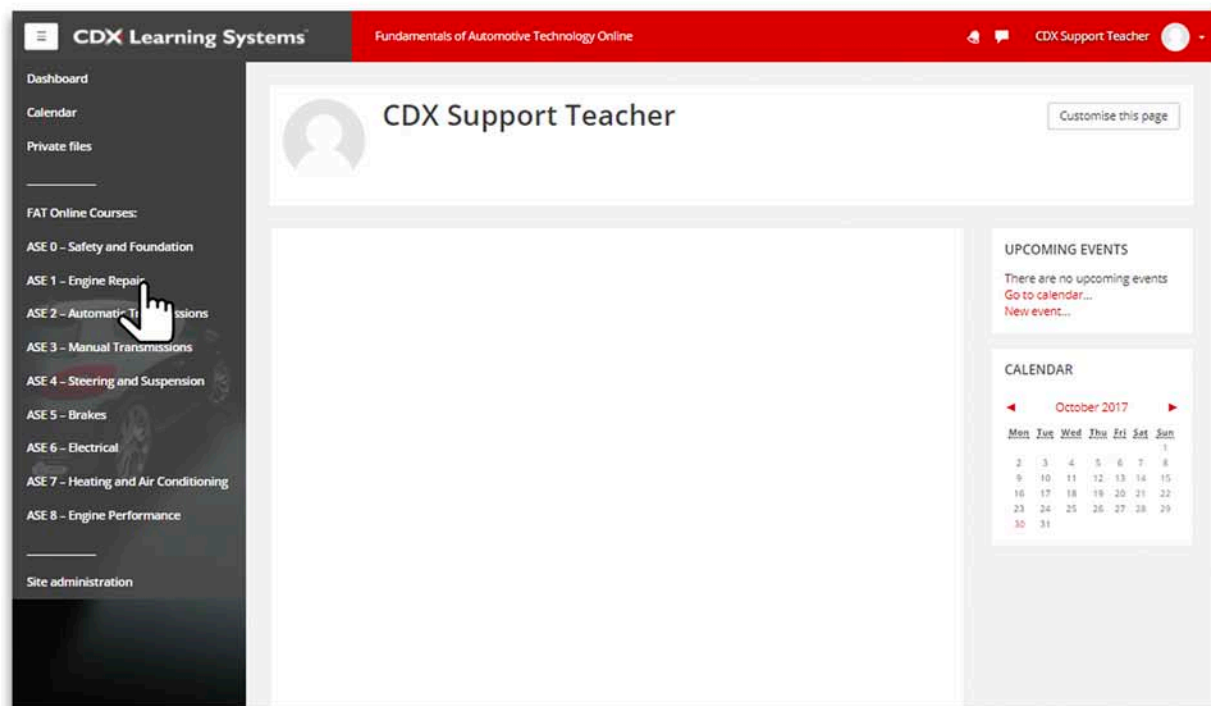
Contact the CDX Support Helpdesk

Email: [cdxsupport@partnerinpublishing.com](mailto:cdxsupport@partnerinpublishing.com)

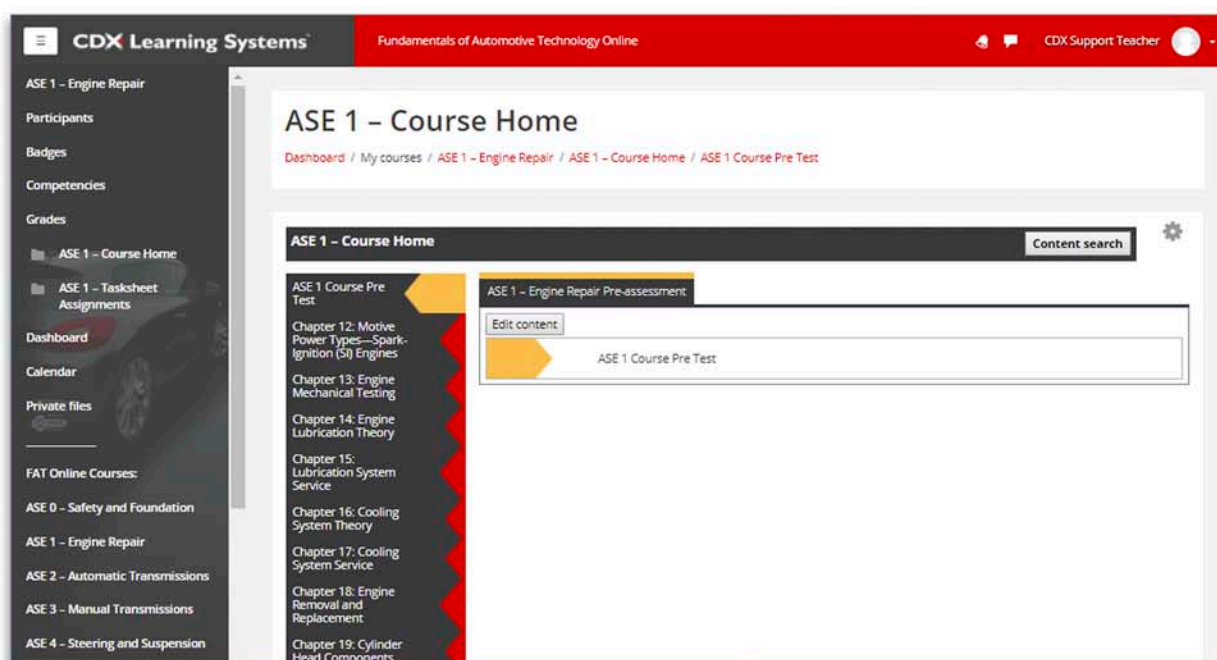
Phone: 1-844-273-7537

Certain Courses contain Diagnostic Scenarios that allow students to test their ability to diagnose issues they may run into.

To access them, click on the course that contains the Diagnostic Scenarios you want to access from the navigation on the left.

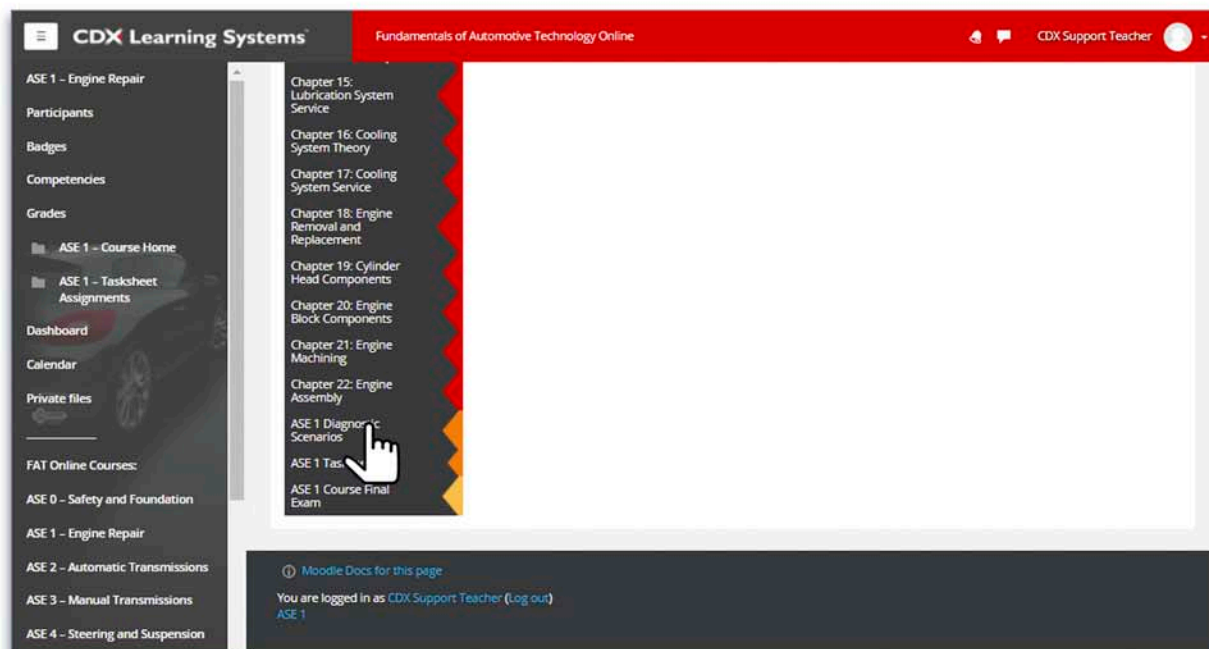


This will bring you to a page with all the chapters down the left with the sections of the currently selected chapter across the top.

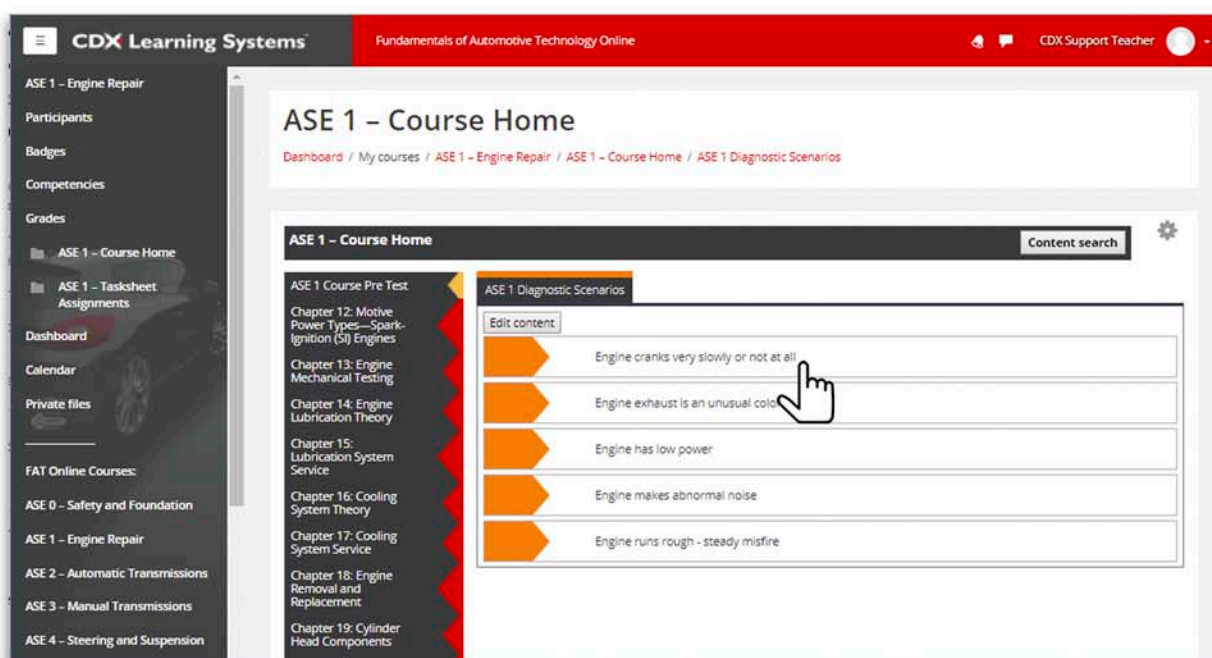


Near the bottom of the list of chapters you will see an option labeled Diagnostic Scenarios.

Clicking on that option will give you a list of Diagnostic Scenarios that are related to the course you are in.



Clicking on any of the Diagnostic Scenarios will open that Scenario in a new window.



Each Scenario will have 3 steps to addressing the issue. Verify, Identify, and Rectify.

At each step, you will be given relevant details and then a list of actions to take.

Engine Repair
Verify Identify Rectify

**Problem**  
Engine cranks very slowly or not at all - starting system working properly.

**Symptoms**  
Engine oil very low.

**What Should You Do ?**  
Check fuel for contaminants.  
Start engine and listen to noise with a stethoscope.  
Read PCM codes with scan tool.  
Check for vacuum leaks with smoke machine.  
Measure required torque to turn over engine by hand, compare to specs.  
Start engine and observe color and odor of exhaust.  
Perform cooling system pressure check.

**SCORE: 10/10**  
**Objective**  
Use your automotive knowledge to diagnose and fix the problem without making incorrect choices and losing points. Start by selecting the best procedure to verify the customer's concern. You will lose one point if you do not pick the best choice, but you can try again. If you make incorrect choices, you will be offered a hint. Accepting a hint will cause you to lose one point.  
**Score**  
10 - Excellent!  
8/9 - Well done, but you still have room for improvement 7 or less - Sorry, you need to build up your knowledge in this area.

Find the correct action and click on it.

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**Score**  
10 - Excellent!  
8/9 - Well done, but you still have room for improvement 7 or less - Sorry, you need to build up your knowledge in this area.



If you select an incorrect action, you will be told what results it would return, why it is the wrong action, and it will grey out that option so that you can select another option.

**Engine Repair**

**Verify** Identify Rectify

**Problem**

Engine cranks very slowly or not at all - starting system working properly.

**Symptoms**

Engine oil very low.

**What Should You Do ?**

Start engine and observe color and odor of exhaust.  
Start engine and listen to noise with a stethoscope.  
Check for vacuum leaks with smoke machine.

**Result**

All results are within required specifications.

**Incorrect**

One point has been deducted. Click the Verify button to return to the previous screen.

**Verify**

**SCORE: 9/10**

**Diagnostic Path**

**Verify** Identify Rectify

Perform cooling s... **X**

If you get multiple incorrect answers, you will be given a hint to help find the correct answer.

**Engine Repair**

**Verify** Identify Rectify

**Problem**

Engine cranks very slowly or not at all - starting system working properly.

**Symptoms**

Engine oil very low.

**Hint**

Does the engine turns normally with the plugs removed?

**What Should You Do ?**

Start engine and observe color and odor of exhaust.  
Start engine and listen to noise with a stethoscope.  
Check for vacuum leaks with smoke machine.  
Perform cooling system pressure check.  
Read PCM codes with scan tool.  
Check fuel for contaminants.  
Measure required torque to turn over engine by hand, compare to specs.

**SCORE: 7/10**

**Diagnostic Path**

**Verify** Identify Rectify

Perform cooling s... **X**

Check for vacuum... **X**

Once you select the correct option, it will tell you the result, and give you a button to move on to the next step.

### Engine Repair

VerifyIdentifyRectify

**Problem**

Engine cranks very slowly or not at all - starting system working properly.

**Symptoms**

Engine oil very low.

**Hint**

Does the engine turns normally with the plugs removed?

**What Should You Do ?**

Start engine and observe color and odor of exhaust.  
Start engine and listen to noise with a stethoscope.

**Result**

With accessory belt and spark plugs removed, engine requires excessive torque to turn it over in either direction.

**Correct**

Congratulations, this is the best choice. Click to Move On button to identify the cause of the problem.

Move On

SCORE: 7/10

**Diagnostic Path**

VerifyIdentifyRectify

Perform cooling s... ❌

Check for vacuum... ❌

Measure required ... ✔️

After choosing the correct Rectify solution, you will be given feedback of how the scenario is resolved and clicking to move on will close the window.

### Engine Repair

VerifyIdentifyRectify

**Problem**

Engine cranks very slowly or not at all - starting system working properly.

**Symptoms**

Engine oil very low.

**What Should You Do ?**

Replace engine lubrication system components.  
Replace Exhaust valve(s) or rebuild/replace head.  
Replace pistons with standard sized pistons and piston rings. Also hone cylinder walls.  
Replace crankshaft and bearings.  
Hone cylinders and replace piston rings.  
Check head and block. If OK, replace head gasket.  
Replace timing belt/chain.  
Overhaul/replace engine.

**Result**

**Result**

Yes, this is the only reasonable action.

**Congratulations, you have successfully resolved the problem.**

Close

SCORE: 2/10

**Diagnostic Path**

VerifyIdentifyRectify

Replace engine lu... ❌

Replace pistons w... ❌

Replace Exhaust v... ❌

Check head and b... ❌

Hone cylinders an... ❌

Overhaul/replace ... ✔️