



Course Title:	Gas Engines I
Course Number:	CAT 500
Course Length:	36 Hours
Course Format:	70% ILT, 30% Lab, 0% Web
Class Max:	8
Class Minimum:	4
Course Cost(s):	Pricing Policy
Prerequisite(s):	None

Course Description:

Gas Engines I students study the basic operating principles of gaseous-fueled engines. Emphasis is on the composition of gaseous fuels, horsepower calculations, maintenance, fuel system, intake and exhaust system, and the ignition system. In addition, the students learn about the media resources available through SIS (Service Information System) and GERP (Gas Engine Rating Pro). The Lab engine is a G3406, although the content covers the G300, G3300, G3400, and G3500 series of Caterpillar engines.

Course Objectives:

Upon completion of this course, the participant will be able to:

- Explain the operating principles of basic gaseous fueled engines
- Understand the air fuel ratio differences between a standard, rich, and lean burn gas engine
- Evaluate pre-ignition, detonation, and misfire
- Calculate the effect of temperature, altitude, and fuel heat value on developed horsepower
- Identify the proper media and procedures for preventive maintenance practices and schedules
- Perform cooling system, lubrication system, and fuel system maintenance
- Determine the effects of separate circuit after coolers on engine performance
- Understand operation, define correct settings, and adjust a gas pressure regulator
- Measure and calculate the pressure relationships in a gas engine
- Understand operation and adjustments of a carburetor
- Determine the effects of turbochargers and wastegates on engine performance
- Correctly set up and tune a gas engine using an exhaust gas analyzer
- Understand the Altronic magneto ignition system, and correctly set ignition timing
- Perform diagnostic troubleshooting of a gas engine based on the learned class principles

Registration Information:

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