



PCE191

Gasoline & Diesel Fuel Technology

Course Introduction:

This five-day course provides an introduction to gasoline and diesel fuel technology. Its teachings include refining, blending, specifications, performance, environmental aspects and the use of additives. Current and future challenges faced by the motor manufacturers, oil and additive industries will also be addressed.

Course Objectives:

Upon successful completion of this course, the delegates will learn:

- ✓ Determine the various gasoline & diesel fuel properties including volatility, octane & cetane numbers, density, API gravity, distillation profile and initial & final boiling point
- ✓ Review & apply the different processes and techniques involved in gasoline & diesel fuel manufacture and introduce the other alternative fuels used in the industry
- ✓ Learn the gasoline & diesel fuel specifications including their importance, features & functions
- ✓ Identify the test methods, equipment and ASTM standards applicable for gasoline & diesel fuels
- ✓ Learn the fuel types such as naphtha, kerosene, aviation turbine fuels, automotive diesel oil & fuel oil and emphasize their practical use & application
- ✓ Become familiar with fuel properties & vehicle performance and understand the engine design including its good maintenance practices
- ✓ Acquire knowledge on automotive emissions including its major factors which influence exhaust emissions and explain the global emissions legislation & fuel economy trends
- ✓ Determine the various gasoline & diesel fuel additives and be able to explain their characteristics, features, functions, importance & role
- ✓ Perform gasoline & diesel fuel blending methods and become familiar with its components, blending calculations and blending indices
- ✓ Have a good background on batch & in-line blending including their set-up

Who Should Attend?

This course is intended for personnel involved with the quality, supply, refining, technical service and marketing of automotive fuels and concerned with the effective use of additives to maintain or improve quality. Further, the seminar is suitable for Environmental, Health and Safety professionals.

Course Outline:

Day 1:

Fundamentals

- Basic fuel chemistry
- Normal and abnormal combustion

Manufacture

- Refinery processes
- Blend component characteristics
- Major quality constraints
- Manufacturing options

Day 2:

Specifications

- Typical specification criteria and specification trends
- Importance in manufacture and blending
- "Green" fuels
- Test methods and equipment

Fuel Properties and Vehicle Performance

- Basic relationships between fuel characteristics and vehicle performance
- Meeting octane and cetane requirements
- Volatility and its influence on vehicle drive ability and emissions
- Fuel composition and density
- Influence of biofuels
- Fuel sulphur content
- Hot and cold weather performance
- Stability

Day 3:

Automotive Emissions

- Gaseous and particulate emissions
- Environmental and health concerns
- Emissions measurement techniques
- Fuel properties and their influence on emissions

Day 4:

Motor Industry Viewpoint

- Global emissions legislation and fuel economy trends

- Developments in engine and exhaust after-treatment technologies
- Implications for automotive fuel quality

Day 5:

Additives

- Multi-functional additive packages
- Refinery additives
- Additives for marketing and environmental purposes

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course location. This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

