

COURSE CONTENTS

1. Chemistry of Crude Oil: Composition and Classification
2. Refinery Configuration
3. Analysis and testing of petroleum products (Presentation)
4. Overview of Adulteration
5. Detection of adulteration in auto fuels and International Practices
6. Introduction of Chromatographic and Spectroscopic Techniques for Testing of Petroleum Products and Impact of Adulteration on Environment
7. Gas chromatography on adulteration
8. Impact of Fuel adulteration on engines and Lab visit
9. Analysis and testing of petroleum products

PRACTICALS

Analysis of MS

Density, ASTM D-86 Distillation, Reid vapor pressure, Vapour lock index, FIA, Total sulphur (ASTM D-4294 & 5453), Benzene content, Oxygenates, RON, MON, Copper Strip Corrosion, Existent gum, potential gum, Induction period , Lead Content

Analysis of HSD

Density, Kinematic viscosity, pour point, cloud point, CFPP, Cetane Number, Cetane index, Flash Pt./Abels, Aromatics contents, HFRR, Oxidation Stability , Particulate Contaminants , Moisture , ASTM Distillation , RCR , Ash Content , Acidity In organic & Total , Copper Corrosion

Kerosene/ ATF test

Sp. Gravity, Aromatic contents, Olefinic content, kinematic viscosity, smoke point, Naphthalene %, freezing point, ASTM D-86, Water content, conductivity test, JFTOT (Jet fuel test)

Gasoline & Diesel Quality Parameters (RON, MON, CETANE No) using CFR Engine

Calibration & Standardization of RON, MON, CETANE No unit, as per ASTM test procedures Operation of RON, MON, CETANE Unit

NMR, FTIR