Programme Contents

Two Weeks Training Program on **'Analysis of Petroleum and its allied products'**

PROGRAM CONTENT

Duration: 3 weeks

Day 1
Inauguration & Presentation on Refinery Configuration
• Presentation on Chemistry of Crude oil: Composition and classification • Presentation on Crude assay using Physico-Chemical and Analytical Methods
Day 2
• Presentation on Petroleum Product Characterization • Crude oil products viz NGL, LNG, LPG, gasoline, Naptha, Kerosene, Middle distillates, long residue, VGO, short residue, lube oil and bitumen, their characterization by ASTM/ UOP/ IP/ IS test methods • Presentation on Latest specifications of petroleum products • LPG, Naphtha , MS, HSD, Kerosene, ATF (BIS, Defstan, ASTM), Furnace oil, bitumen, Pet Coke , sulfur Granules etc. • Presentation on Physico chemical characterization of Lubricating Oils
Day 3
• Lab Visit : Analysis of MS(Practical) • Density, ASTM D-86 Distillation, Reid vapor pressure, vapour lock index, Existent Gum, FIA, Total sulphur, Benzene content, Oxygenates,
Day 4
• Lab Visit: Diesel/Kerosene/ ATF test • Pour Point/CFPP, Ash, Aromatic contents, Olefinic content, kinematic viscosity, smoke point, Naphthalene %, freezing point, ASTM D-86, Water content, conductivity test, Jeftot (Jet fuel oxidation test), Total sulphur, Mercapton, H2S, Acidity, Colour Saybolt, Smoke Point, silver strip corrosion test, Burning Quality, Char value, Bloom on Chimney FIA , Flash point (Manual & Auto) , Water reaction , Existent Gum , Particle counter, etc
Day 5
• Tests related to petroleum products • Foaming characteristics, TAN and TBN, VI, Evaporation loss by Noacks Method, Emulsion characteristics, Rust preventive characteristics, Air release value, carbon residue Total nitrogen (instrumental – Chemiluminiscence and Kjeldahls) , Calorific value by Bomb Calorimeter , etc..
Day 6 & 7
Education/Excursion trip to Haridwar, Rishikesh and Mussoorie
Day 8
• 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
Day 9
• Instrumental analysis technique like GC, HPLC, SFC, and GC-MS spectrometry etc: Theory, Instrumental Setup, Qualitative, Quantitative-Analysis, Application
Day 10, 11 & 12
• Instrumental analysis techniques : NMR, FTIR, UV/ visible: Theory, Instrumental Setup, Qualitative, Quantitative-Analysis, Application
Day 13
• Elemental analysis by ICP-AES & AAS: Theory, Instrumental Setup, Qualitative, Quantitative-Analysis, Application
Day 13, 14 & 15
Education/Excursion trip to Agra, Delhi
Day 16
• Presentation on Automotive Fuel Quality • Presentation on LPG & CNG
Day 17
• Presentaion on Petroleum Coke Overview(RPC/CPC/Needle Coke) & Bitumen • Lab visit for test related to assessment the quality of Bitumen
Day 18
• Presentation on petroleum waxes & Greases
Day 19
• Open Discussion/Valedictory

****