

PCE7J002

Petroleum Refinery Engineering

3-0-0

**Module I:**

Origin and formation of petroleum, reserves and deposits of the world, Indian petroleum industries, composition of petroleum. Crude pretreatment: dehydration and desalting. Pipe still heater, atmospheric and vacuum distillation of crude oil.

Important products, properties, and test methods: natural gas, associated gas, dissolved gas, refinery off gas, LPG, Reid vapour pressure, ASTM distillation, octane and cetane numbers.

**Module II:**

Treatment of products, additives, blending of gasoline. Treatment of gasoline, kerosene, lubes and lubricating oils, waxes.

**Module III:**

Thermal and catalytic cracking, hydro cracking and hydro treating.

Coking, visbreaking, alkylation, isomerization, asphalt, and air blown asphalt.

**Text and Reference Books:**

1. Petroleum Refinery Engineering, W L Nelson, McGraw-Hill.
2. Modern Petroleum Refining Processes, 5th ed. by B K B Rao, Oxford & IBH.
3. Petroleum Refining: Technology and Economics, 5th ed. by J H Gary, G E Handwerk, and M J Kaiser, CRC Press.
4. Handbook of Petroleum Processing, 2nd ed. by S A Treese, P R Pujado, and D S J Jones, Springer.