

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

CHEMICAL ENGINEERING

Subject Name: **PETROLEUM REFINING & PETROCHEMICALS**

Sr. No.	Course Contents	Total Hrs
1.	Types of crude, Evaluation of oil stocks and refinery products	6
2.	Properties of Petroleum oil products : Definition and significance of various properties like API gravity, Aniline point, Diesel index, Cloud point, Pour point, Flash point, Fire point, Smoke point, Octane number, Cetane number, Softening point, etc	3
3.	Processing of petroleum: Atmospheric & Vacuum distillation	6
4.	Treating operations for crude and refinery products, Sweetening process, propane deasphalting, etc.	6
5.	Thermal & Catalytic cracking processes employed in refineries, Oil fields & refineries in India	6
6.	Manufacturing process of Chemicals from methane : Manufacturing process of methanol, Acetic acid, Vinyl Acetate, Poly Vinyl Acetate	9
7.	Manufacturing process of chemicals from ethylene : Manufacturing process of Ethylene, Low density polyethylene, High density polyethylene, Vinylchloride monomer, Polyvinylchloride, Ethylene oxide and Ethylene glycol	9
8.	Manufacturing process of Propylene and Polypropylene, Manufacturing process of styrene, Polystyrene, Styrene butadiene rubber	9

Practical and Term work:

Practicals on determining properties of fractions of crude petroleum oil as per IS: 1448

Text books:

1. Modern Petroleum Refining Processes, by B.K. Bhaskara Rao
2. Dryden's Outlines of chemical technology, 3rd ed., M Gopal Rao, Marshall sitting

Reference Books:

1. Petroleum Refining - Technology and Economics, by James H. Gary & Glenn E. Handwerk
2. Shreve's Chemical Process Industries by George Austin
3. Encyclopedia of chemical engineering by Kirk & Othmer
4. Petroleum Refinery Engineering by Nelson