PETROLEUM REFINING AND PETROCHEMICALS
(Professional Elective-II)

COURSE CODE: 15CH1124
L T P C
3 0 0 3

COURSE OUTCOMES:
At the end of the course the student shall be able to

CO 1 Discuss the origin, formation and composition of crude oil & their test methods.

CO 2 Recognize the importance of dehydration of crude and distillation operation.

CO 3 Describe the importance of thermal and catalytic cracking.

CO 4 Classify the feed stocks for production of chemicals from methane.

CO 5 Classify the chemicals that can be obtained from Ethane, Ethylene and Acetylene.

UNIT-I (10 LECTURES)
ORIGIN, FORMATION AND COMPOSITION OF PETROLEUM:
Origin and formation of petroleum, Reserves and deposits of world, Indian Petroleum Industry.

PETROLEUM PROCESSING DATA:
Evaluation of petroleum, thermal properties of petroleum fractions, important products, properties and test methods.

UNIT-II (10 LECTURES)
FRACTIONATION OF PETROLEUM:
Dehydration and desalting of crudes, heating of crude pipe still heaters, distillation of petroleum, blending of gasoline.

TREATMENT TECHNIQUES:
Fraction-impurities, treatment of gasoline, treatment of kerosene,
treatment of lubes.

**UNIT-III** (10 LECTURES)

**THERMAL AND CATALYTIC PROCESSES:**
Cracking, catalytic cracking, catalytic reforming, Naphtha cracking, coking, Hydrogenation processes, Alkylation processes, Isomerization process.

**UNIT-IV** (8 LECTURES)

Petrochemical Industry – Feed stocks

**CHEMICALS FROM METHANE:**
Introduction, production of Methanol, Formaldehyde, Ethylene glycol, PTFE, Methylamines

**UNIT-V** (12 LECTURES)

Chemicals from Ethane-Ethylene-Acetylene: Oxidation of ethane, production of Ethylene, Manufacture of Vinyl Chloride monomer, vinyl Acetate manufacture, Ethanol from Ethylene, Acetylene manufacture, Acetaldehyde from Acetylene.

**TEXT BOOKS:**

**REFERENCES:**