

UG
Course Code: **CH304**
Credit: **3**
Version: **1**
Prerequisite Course: **Nil**

Department: **Chemical Engineering**
Course Name: **Petroleum Refining**
L-T-P: **3-0-0**
Approved on:

Introduction: World petroleum resources, petroleum industry in India, origin, exploration, drilling and production of petroleum crude, transportation and pre-treatment of crude oil. Composition and classification of petroleum crude, ASTM, TBP and FEV distillation of crude oil. Properties and specification of petroleum products – LPG, Gasoline, naphtha, kerosene, diesel oil, lubricating oil, wax etc.

Separation Processes: Design and operation of topping and vacuum distillation units. Tube still furnaces. Solvent extraction processes for lubricating oil base stocks and for aromatics from naphtha and kerosene, solvent dewaxing.

Conversion Processes: Thermal and catalytic cracking, vis-breaking and coking processes, reforming, hydro processing, alkylation, polymerization and isomerisation.

Safety and pollution considerations in refineries.

Books

1. Nelson, W. L., "*Petroleum Refinery Engineering*," 4th ed., McGraw Hill, 1987.
2. Garry, J. H. and Handwrek, G. E., "*Petroleum Refining, Technology and Economics*," 2nd ed., Marcel-Dekker.
3. Rao, B.K.B., *Modern Petroleum Refining Processes*, 4th ed., Oxford, IBH, 2002
4. Watkins, R.N. *Petroleum Refinery Distillation*, 2nd ed., Gulf Publishing, Houston, TX, 1981
5. Kobe, K. A. and McKetta, J. J., "*Advances in Petroleum Chemistry and Refining*", Wiley Interscience.