

UCH844 PETROLEUM TECHNOLOGY

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Course Objectives:

To impart knowledge of petroleum refining and hydrocarbon processing.

Introduction: World petroleum resources, Petroleum industry in India, Origin, Exploration, Drilling and production of petroleum crude, Transportation and pretreatment of crude oil.

Characterization: Composition and classification of petroleum crude, ASTM, TBP and EFV distillation of crude oil, Properties and specifications of petroleum products - LPG, gasoline, naphtha, kerosene, diesel oil, lubricating oil, wax etc.

Separation Processes: Pretreatment of crude, Crude distillation, Vacuum distillation, Gasoline treatment and operation of topping, Tube still furnaces, Solvent extraction processes for lubricating oil base stocks and for aromatics from naphtha and kerosene, dewaxing.

Conversion Processes: Thermal and catalytic cracking, Vis-breaking and coking processes, Reforming, Hydroprocessing, Alkylation, Polymerisation and isomerisation, Product finishing processes.

Course Learning Outcomes (CLO):

The students will be able to:

1. acquired knowledge of characterization of petroleum.
2. know the properties and specification of petroleum products.
3. acquired knowledge of different separation processes involved in petroleum refinery.
4. acquired knowledge of various conversion processes involved in petroleum refinery.

Text Books:

1. Bhaskara Rao, B.K. *Modern Petroleum Refining Processes*. Oxford & IBH Publishing Company Pvt. Ltd. New Delhi, (2007).
2. Prasad, R. *Petroleum Refining Technology*, Khanna Publishers, (2011).
3. Mall, I.D. *Petrochemical Process Technology*, Mecomillan Publishers, (2006).

Reference Books:

1. Nelson, W. L. *Petroleum Refinery Engineering*, Tata McGraw Hill Publishing Company Limited, (1958).
2. Garry, J.H. *Petroleum Refining Technology and Economics*, Marcel Dekker Inc., (2001).
3. Wells G. M. *Handbook of petrochemicals and processes*, Ashgate Publishing Ltd, (1999).
4. Spitz P. H. *Petrochemicals: The rise of an industry*, John Wiley & Sons, (1999).
5. Sarkar, G.N. *Advanced Petroleum Refining*, Khanna Publishers, (2000).

Evaluation Scheme:

S. No.	Evaluation Elements	Weightage (%)
1	MST	30
2	EST	50

3	Sessional (may includes assignments/ quiz's etc)	20
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