Course Type	Course Code	Name of the Course	L	T	P	Credits
DE	CHD401	Petrochemical Technology	3	0	0	9

Course Objective
To analyze and understand petrochemical unit processes for process development
Learning Outcomes
Upon successful completion of this course, student will: · be able to know the available techniques for the production of petrochemicals and · understand their working principles of tools and technique used in petrochemical industries.

Unit No.	Topic to be covered	Lecture Hours	Learning Outcome
1	**Introduction:** Primary raw materials for Petrochemicals, petroleum products and petrochemicals, overview of petrochemical industry in India, selection of feed stock	**08**	You will have an overview of the petrochemical industries and important products with their respective raw materials
2	**Hydrocarbon and non-hydrocarbon intermediates:** Chemicals based on methane, ethane and higher paraffins, production of olefins, diolefins and acetylene from gas and naphtha, separation of cracker products	**12**	You will learn methods of production and purification of various petrochemicals such as olefins, diolefins, acetylene, etc. from gas, naphtha, and various paraffins.
3	**Petrochemicals Products:** Steam reforming of natural gas, naphtha and heavy distillate to produce hydrogen and synthesis gas, production of methanol and higher alcohols, chemicals based on benzene, toluene, and xylene, polymerization	**12**	You will learn about steam reforming to produce hydrogen and syngas,
4	**Alkylation:** Oxidation, nitration and hydrolysis, sulfation and isomerization, halogenation and esterification	**10**	You will learn about the techniques for value addition of the petroleum products.

Textbooks:

1. Sami M., and Lewis F. Hatch. (2001). Chemistry of petrochemical processes. Elsevier

Reference Books:

1.Margaret W. (2002). Handbook of Petrochemicals and Processes, 2nd Ed., Ash Gate Publishing Ltd.

2.Dryden, C.E. (1993). Outlines of Chemical Technology. 2nd Ed., Affiliated East-West Press.