

SARDAR PATEL UNIVERSITY**Programme: B.Sc (Chemistry)****Semester: IV****Syllabus with effect from: November/December-2012**

Paper Code: US04ECHE02	Total Credit: 2
Title Of Paper: Industrial Chemistry - II	

Unit	Description in detail	Weighting (%)
I	Introduction To Petroleum Technology Petroleum, Classification of petroleum, fractional distillation of crude oil, cracking, reforming, refining.	
II	Industrial Fermentation Introduction, definition, cultural development, inoculums preparation, nutrients for microorganism, toxic effects on culture, manufacture of industrial alcohol by fermentation, Vinegar (Acetic acid) and Penicillin-G	
III	Unit Processes In Organic Synthesis-I Nitration: Introduction, nitrating agents, Nitration of paraffinic hydrocarbon, manufacturing of nitrobenzene by batch & continuous process and o-/p-nitrobenzene. Amination: (a) By reduction: Introduction and manufacturing of Aniline and m-nitro aniline. (b) By ammonolysis: Introduction and aminating agents. Chlorination: Introduction, Chlorinating agents and Photochlorination of Cyclohexan	
IV	Unit Processes In Organic Synthesis-II Sulphonation: Introduction, sulphonating agents, Benzene and its derivatives, manufacturing properties and uses of α - and β -naphthalene sulphonic acid. Oxidation: Introduction to types of oxidative reactions, oxidizing agents, manufacturing, preparation and uses of Formaldehyde, Phthalic anhydride and acetic acid. Esterification: Introduction, esterification by organic acid Esters by additions to unsaturated systems, manufacturing, properties & uses of Vinyl acetate.	

Basic Text & Reference Books :-

- Modern Petroleum Refining Processes, 2nd Edition, by B. K. Bhaskara Rao.
- Shreve's Chemical Process Industries, 5th Edition, by George T. Austin.
- Industrial Microbiology by A. H. Patel (Macmillan India Ltd.-New Delhi).
- Unit processes in organic synthesis, 5th Edition, by P. H. Groggins.

