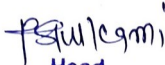



K.T.S.P.MANDAL'S
HUTATMA RAJGURU MAHAVIDYALAYA, RAJGURUNAGAR
DEPARTMENT OF CHEMISTRY
Syllabus Completion Report 2022-2023
Class: T. Y. B. Sc., term-1 Sem.-V
Name of Paper: CH-505: Industrial Chemistry - I
No. of Lectures allotted per week: 03
 Name- Prof. Kolekar S.S,

Sr. No.	Month	No. of Lect. Taken	Name of Chapter	Topic Covered
1	Aug 2022	03L	Modern Approach to Chemical Industry	Introduction, basic requirements of chemical industries, chemical production, unit process and unit operations
2	Sep. 2022	05 L	Modern Approach to Chemical Industry	Quality control and quality assurance, process control, research and development, human resource, safety measures, classification of chemical reactions, batch and continuous process, Conversion, selectivity and yield, copyright act, patent act, trademarks.
	Sep. 2022	02 L	Manufacture of Basic Chemicals	Ammonia: Manufacture of ammonia by modified Haber-Bosch process, Physico-chemical principles involved and uses of ammonia. Nitric acid: Manufacture of nitric acid by Ostwald's process, Physico-chemical principles involved and uses of nitric acid.
3	Oct. 2022	05 L	Manufacture of Basic Chemicals	Manufacture of Sulphuric acid by contact process, Physico-chemical principles involved and uses of Sulphuric acid
		03L	Soap	Soap: Soap and Fatty Acids: Introduction, Chemistry, Manufacturing Technology, Raw Materials, Functional Properties of Soap, Manufacturing Processes, Saponification Reactor, Cooling, Soap Separator
	Nov. 2022	8L	Dyes And Pigments	Dyes: Introduction, qualities of good dye, Colour constituents (Chromophore, auxochrome), classification of dyes according to their application, Synthesis and uses of following dyes: Nitroso dye-martius yellow, Azo dyes-Methyl orange and aniline yellow, Triphenylmethane dye-Crystal violet, Phthalein dye - Phenolphthalein, Xanthane-Fluorescein,
4				

5	Dec-2022	07	Sugar and Fermentation Industry	<p>Anthra-quinone, Alizarin and Indigo dyes - Indigo Introduction, classification and general properties of pigments. Inorganic pigments: i) Zinc oxide pigments (Fundamentals and properties, Raw materials, Direct process.</p> <p>Sugar: Introduction, manufacture of cane sugar, extraction of juice, purification of juice, sulfitation and carbonation, evaporation, crystallization, separations of crystals, drying refining, grades, recovery of sugar from molasses, by-product of sugar industry</p> <p>fermentation Industry: Introduction, importance, conditions favorable for fermentation, Characteristics of enzymes, short account of some fermentation processes, Alcohol beverages,</p>
---	----------	----	---------------------------------	---


 Head
 Department of Chemistry
 Hutatma Rajguru Mahavidyalaya,
 Rajgurunagar




 Dr. Shirish S. Pingale
 Principal
 Hutatma Rajguru Mahavidyalaya,
 Rajgurunagar, Tal. Khed, Dist. Pune.

**K.T.S.P Mandal's
HutatmaRajguruMahavidyala
Rajgurunagar, Tal. Khed Dist. Pune
Syllabus Completion Report Year 2022-23**

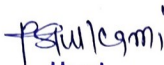
Class: T.Y. B. Sc. Term-II

Name of Paper: DSEC-VI: CH-608: Organic Chemistry-III


No. of Lectures allotted per week: 03

Name of Teacher: Prof. Kolekar S.S.

Sr. No.	Month	Name of Chapter	Topic Covered
1.	March 2023	Reagents in Organic Synthesis	Reagents- Preparation and Applications of following reagents. Reducing Reagents: Lithium aluminium hydride LiAlH_4 , NaBH_4 , DIBAL-H, $\text{Li}(\text{tBuO})_3\text{AlH}$ & Raney Nickel., Oxidizing Reagents: DMSO either with DCC or Ac_2O , Dess Martin reagent, Osmium tetroxide, Selenium dioxide- (SeO_2) , DDQ.
2.	Feb. 2023	Retrosynthetic Analysis and Applications	Introduction, Different terms used Disconnection, Synthons, Synthetic equivalence, FGI, TM. One group disconnection, Retrosynthesis and Synthesis of target molecules: Acetophenone, Crotonaldehyde, Cyclohexene, Benzyl benzoate, and Benzyl diethyl malonate.
3.	April 2023 and	Organic Reaction Mechanism and Synthetic Applications	Chemistry of reactive intermediates (carbocations, carbanions, free radicals, carbenes, nitrenes, benzynes etc Wolff rearrangement, Hofmann rearrangement. Simmons-Smith reaction, Michael reaction, Wittig reaction and McMurry reaction, Diels-Alder reaction Functional group interconversions and structural problems using chemical reactions
4.	May 2023	Natural Products	Terpenoids: Introduction, Isolation, Classification. Citra structure determination using chemical and spectral methods, Synthesis of Citral by Barbier and Bouveault Synthesis. Alkaloids: Introduction, extraction, Purification, Some examples of alkaloids and their natural resources. Ephedrine-structure determination using chemical methods. Synthesis of Ephedrine


Head
Department of Chemistry
Hutatma Rajguru Mahavidyalaya,
Rajgurunagar




Dr. Shirish S. Pingale
Principal
Hutatma Rajguru Mahavidyalaya,
Rajgurunagar, Tal. Khed, Dist. Pune.

**K.T.S.P Mandal's
HutatmaRajguruMahavidyala
Rajgurunagar, Tal. Khed Dist. Pune
Syllabus Completion Report Year 2022-23**

Class: F. Y. B. Sc. Chemistry,


Sem.-II

Name of Paper: Chemistry Practical


No. of Lectures allotted per week: 4 For (3 ½) Batches

Name of Teacher: Prof. Kolekar S.S

Sr. No.	Name of Practical
1	Synthesis of potash alum from aluminium metal (scrap Aluminium metal)
2	Synthesis of Mohr's Salt $[(\text{FeSO}_4)(\text{NH}_4)_2\text{SO}_4] \cdot 6\text{H}_2\text{O}$
3	Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture
4	Estimation of acid neutralizing capacity of antacids like Gelusil tablet/ Gellusil syrup etc.
5	Determination of Basicity of oxalic acid
6	Purification of organic compounds by crystallization (from water and alcohol)
7	To draw polar plots of s and p orbitals.
8	Oxime and 2,4-dinitrophenylhydrazone of aldehyde/ketone
9	Semi carbazone derivatives of aldehydes and ketones


Head
Department of Chemistry
Hutatma Rajguru Mahavidyalaya,
Rajgurunagar




Dr. Shirish S. Pingale
Principal
Hutatma Rajguru Mahavidyalaya,
Rajgurunagar, Tal. Khed, Dist. Pune.