

Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College,
Rajur, Tal. Akole, Dist. Ahilyanagar

Department of Chemistry

ANNUAL TEACHING PLANNING

2026-2027

Class- S. Y. B. Sc.

(As Per National Education Policy-2020)

Semester- III

Subject-

CHE-221-VSC-T: Industrial Chemistry-I

Month	Chapter	Number of Periods
July	Chapter 1: Introduction to Industrial Chemistry Definition, scope, and significance of industrial chemistry, Classification of industries: large-scale, medium-scale, small-scale, Importance of the chemical industry in daily life and national economy, Types of raw materials: minerals, fossil fuels, air, water, agricultural materials, Difference between renewable and non-renewable raw materials, Role of industrial chemists and plant chemists.	4 Hours
August	Chapter 2: Industrial Pollution Control Overview of Industrial Pollution, Pollution Control Technologies: Scrubbers, Electrostatic Precipitators (ESP), Bag filters. Water: Effluent Treatment Plant (ETP), Reverse Osmosis (RO), Zero Liquid Discharge (ZLD). Solid waste: Incineration, Landfilling, Composting, Waste to Energy. Cleaner Production and Green Chemistry Approaches: Principles of green chemistry, Waste minimization and solvent	4 Hours

	recovery, Energy-efficient processes	
September	Chapter 3: Unit Operations and Unit Processes Overview of chemical industries in India. Definition and distinction between Unit Operations and Unit Processes. Importance in industrial chemical manufacturing.	11 Hours
October	Chapter 4: Heavy and Fine Chemicals Overview and significance of Heavy and Fine Chemicals in chemical industries. Distinction between bulk production (Heavy Chemicals) and high-purity specialty production (Fine Chemicals). Importance in sectors such as fertilizers, explosives, pharmaceuticals, and electronics.	11 Hours
November	Revision	

CHE-201-IKS-T: Ancient Indian Chemistry

Month	Chapter	Number of Periods
July	Chapter 1: Ancient Indian Chemistry From Alchemy to Chemistry: Early Chemical Techniques, Technology and Arts, Different Areas of Development in Ancient India: Glass Making (Literary Sources, Foreign Travellers' Account, Archaeological Evidences), Paints and Dyes, Perfumes and Cosmetics, Chemicals in Ancient India, Paper and Ink Making, Alcoholic Liquors.	5 Hours
August	Chapter 2: Indian Alchemy in medicines Rasayanas, Etymology of Rasayana, Rasayana as Elixir, The position of Rasayana in Indian medicines Charaka and two categories of medicines, Herbal Rasayanas, Metallic preparations as Rasayana, Iron as a reducing Agent, Charaka's incidental mention of a gold preparation, Calcined metals as Phlogiston, Calcined metals as alchemical preparations, Pulverization of calcined metals, Calcined gold as the ideal herbo-metallic preparation, Indian alchemy (500 A.D.), Indian alchemy (1000 A.D.)	5 Hours
September	Chapter 3: Metallurgy in India Primary Texts on Metallurgy in India: Rig-Veda (tr. adapted from R.T.H. Griffith), Arthaśāstra (tr. R.P. Kangle), Varāhamihira (b. ~ 485 CE), Khaḍgalakṣaṇam (tr. Vibha Tripathi), Nāgārjuna (7th or 8th century CE), Rasendramaṅgalam (tr. H.S. Sharma), Vāgbhaṭa (13th century), Rasaratnasamuccaya (tr. INSA) Classification of metals: Survarṇa (gold) : Varieties, Description of different types of suvarṇa (Prākṛta suvarṇa, Sahaja suvarṇa, Vahni sambhūta suvarṇa, Khanija	15 Hours

	suvarṇa, Rasendra vedhaja suvarṇa), Pharmaco-therapeutic properties of gold. Rajata (silver) : Varieties, Description of different types of rajata (Sahaja rajata, Khanija rajata, Kṛtrima rajata), Qualities of superior and inferior silver, Pharmacotherapeutic properties of silver Tāmra (copper): Varieties, Description of different types of tamrsa (mleccha and nepālaka tāmra), Qualities and inferior tāmra, Pharmaco-therapeutic properties of tāmra Loha (iron): Varieties, subvarieties, Pharmaco-therapeutic properties of muṇḍa loha Vaṅga (tin): Varieties, Physical properties, Pharmaco- therapeutic properties of vaṅga Nāga / śīśa (lead): Physical properties of lead, Pharmaco-therapeutic properties of lead Pittala (brass) : Varieties, Physical properties of superior pittala, Physical properties of superior and inferior properties of pittala, Pharmaco- therapeutic properties of pittala; Knowledge of Fundamental Concepts of Chemistry: Concept of atom, nano particles, metallurgy in India (extraction, Purification, alloying process): copper, iron, zinc, gold and silver, Disappearance of metallurgical skills	
October	Chapter 4: Contribution of Indian Chemists Nagarjuna, Vagbhata, Govindacharya, Yashodhar, Ramchandra, Somdev, Acharya Prafulla Chandra Ray, Sir Har Gobind Khorana, Shanti Swarup Bhatnagar, C. N. R. Rao, Raghunath Anant Mashelkar	5 Hours
November	Revision	

