SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar, Gujarat
(Reaccredited with 'A' Grade by NAAC (CGPA 3.25)
Syllabus with effect from the Academic Year 2021-2022

(Bachelor of Science) (Industrial Chemistry Vocational)
(B.Sc.) (UG) Semester (I)

Course Code	US01CICV52	Title of the Course	LABORATORY
Total Credits of the Course	02 (Two)	Hours per Week	04 (Four)

Course Objectives:	In this practical course students will learn about hands on training of Volumetric analysis and specific analysis related to petroleum industry, cement manufacturing and metal industry. This will improve practical skill of students.

Unit	Description
1.	As per ASTM Standards Testing of Petroleum Products.
2.	Hands on practice for testing and identification of renewable natural resources - cellulose and starch. Preparation of starch from rice, potato, corn. Preparation of chemicals of cellulose and starch.
3.	Analysis of Ores, metals and alloys, brass, etc..
4.	Volumetric analysis, Preparation of standard solution, calibration of apparatus and gravimetric analysis. Analysis of Cement sample.

Teaching-Learning Methodology	Hands on training of Volumetric analysis and specific analysis related to Courses for B. Sc. Industrial Chemistry programme are delivered through classroom, laboratory work in a challenging, engaging, and inclusive manner that accommodates a variety of learning styles and tools. Also bring the students to small scale chemical industries for better exposure of theory and practical part. (PowerPoint presentations, audio visual resources, e-resources, seminars, workshops, models).

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	University Examination: Practical Examination (As per CBCS R.6.8.3)	100%

	Viva-voce, Journal and Attendance.	

Course Outcomes: Having completed this course, the learner will be able to	
1.	Improve practical skills of students.
2.	Students will learn about Testing of petroleum products as per ASTM.
3.	Learn about hands on training of basic laboratory standards; its calibrations and preparation. Cement analysis can give confidence of practical knowledge utilities.

Suggested References:	
Sr. No.	References
1.	American Society for Testing and Materials, ASTM International - Standards Worldwide.
2.	Modern Petroleum Refining Processes, B.K. Bhaskara Rao,
3.	Materials for engineering, Edition 3, John Martin, Woodhad Publishing in materials
4.	A Laboratory tax book of Bio chemistry, molecular biology and microbiology, Sharad Vats. Publisher : GRIN Verlag; 1st edition.
5.	Text book Quantitative chemical analysis, By Vogel's

On-line resources to be used if available as reference material

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