

**Code: 1BCHCVL202****Course: Applied Chemistry Lab for  
CIVIL Engineering****Credits: 1****CIE: 25 Marks****L: T:P: 0:0:2****SET: 25 Marks****SEE Hours: 2****Max. Marks: 50 Marks**

<b>Prerequisites if any</b>	NA
<b>Learning objectives</b>	To impart a strong foundation in the principles of chemistry through experiments with direct relevance to engineering application

**Course Outcomes:***On the successful completion of the course, the student will be able to*

COs	Course Outcomes	Bloom's level
CO1	To understand and apply the concept of analytical techniques, quantitative and qualitative chemical analysis and data interpretation in various science and technological applications	Apply Analyse

**Mapping with POs and PSOs:**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3	PSO4
CO1	3	3			2		2					3			

**Mapping Strength:      Strong- 3      Medium - 2      Low - 1**

Sl.NO	Name of the Experiment	No. of Practical Hours
1	Estimation of total hardness of water by EDTA method.	2
2	Determination of chemical oxygen demand (COD) of industrial effluent sample.	2
3	Estimation of CaO in cement by EDTA method.	2
4	Estimation of copper in brass by Iodometric method	2
5	Estimation of iron in TMT bar by Internal/ External Indicator method.	2
6	Determination of viscosity coefficient of lubricant using Ostwald's viscometer	2
7	Determination of pKa of vinegar using pH sensor (Glass electrode).	2
8	Estimation of copper present in e-waste by optical sensor (Colorimetry).	2
9	Estimation of acids/ acid mixture present in waste water by conductometric sensor (Conductometry).	2
10	Estimation of iron in industrial waste sample by Potentiometric sensor (Potentiometry).	2
11	Determination of alkalinity of given boiler water sample.	2
12	Virtual lab: <a href="#">Available Organic Carbon content in the Soil</a>	1
13	Virtual lab: <a href="#">Determination of Viscosity of Organic Solvents</a>	1



14	Virtual lab: <a href="#">Calorimetry -Heat of Neutralization</a>	1
15	Virtual lab: <a href="#">Available Nitrogen content in the Soil by Kjeldahl method</a>	1
• Any ten experiments will be performed, total practical hours 10 x 2= 20 hours		

**Reference books**

1. "Fundamentals of Analytical Chemistry" by Skoog, West, Holler, and Crouch,
2. "Quantitative Chemical Analysis" by Daniel C. Harris, and "Analytical Chemistry" by G.D. Christian.
3. Vogel's Quantitative Chemical Analysis