

I Year - II Semester

L	T	P	C
0	0	3	2

**APPLIED / ENGINEERING CHEMISTRY LABORATORY** (*Common to all branches*)

1. Introduction to Chemistry laboratory – Molarity, Normality, Primary, secondary standard solutions, Volumetric titrations, Quantitative analysis, Qualitative analysis, etc.
2. Trial experiment - Determination of HCl using standard Na<sub>2</sub>CO<sub>3</sub> solution.
3. Determination of alkalinity of a sample containing Na<sub>2</sub>CO<sub>3</sub> and NaOH.
4. Determination of KMnO<sub>4</sub> using standard Oxalic acid solution.
5. Determination of Ferrous iron using standard K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> solution.
6. Determination of Copper using standard K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> solution.
7. Determination of temporary and permanent hardness of water using standard EDTA solution.
8. Determination of Copper using standard EDTA solution.
9. Determination of Iron by a Colorimetric method using thiocyanate as reagent.
10. Determination of pH of the given sample solution using pH meter.
11. Conductometric titration between strong acid and strong base.
12. Conductometric titration between strong acid and weak base.
13. Potentiometric titration between strong acid and strong base.
14. Potentiometric titration between strong acid and weak base.
15. Determination of Zinc using standard EDTA solution.
16. Determination of Vitamin – C.

**Outcomes:** The students entering into the professional course have practically very little exposure to lab classes. The experiments introduce volumetric analysis; redox titrations with different indicators; EDTA titrations; then they are exposed to a few instrumental methods of chemical analysis. Thus at the end of the lab course, the student is exposed to different methods of chemical analysis and use of some commonly employed instruments. They thus acquire some experimental skills.

**Reference Books**

1. A Textbook of Quantitative Analysis, Arthur J. Vogel.
2. Dr. Jyotsna Cherukuri (2012) *Laboratory Manual of engineering chemistry-II*, VGS Techno Series
3. Chemistry Practical Manual, Lorven Publications
4. K. Mukkanti (2009) *Practical Engineering Chemistry*, B.S. Publication