



Code	Subject Title	Cr. Hrs	Semester
CHEM-302	Physical Chemistry Lab	2	V
Year	Discipline		
3	Chemistry-I, II		

**SYLLABUS OUTLINE:****1. Basic Concepts:**

Preparation of standard molar and Normal solutions and percentage compositions of different compounds

**2. Chemical Kinetics:**

To investigate the kinetics of hydrolysis of ethyl in the presence of an acid.  
To determine the relative strength of acids (HCl and H<sub>2</sub>SO<sub>4</sub>) studying the hydrolysis of an ester.

**3. Electric conductance of electrolytes:**

To determine the cell constant of given cell.  
To determine the equivalence conductance of solution of weak electrolyte.  
At a no. of dilution at room temperature and from this result to verify Oswald's law.  
To determine the solubility of sparingly soluble salt.  
To determine the solubility of weak base of NH<sub>4</sub> OH by titrating it against Standard solution of HCl by using conductivity method.  
To determine the strength of given base by titrating it against standard Acetic acid solution and HCl solution using conductivity meter.  
To determine the strength of HCl and CH<sub>3</sub> COOH in the given mixture of both by titrating it against NaOH conductometrically.  
To determine the equivalent conductance of a weak electrolyte at infinite dilution using Kohlraush law.

**4. Phase Equilibria:**

To determine the partition coefficient of benzoic acid and iodine between CCl<sub>4</sub> and H<sub>2</sub>O.

**RECOMMENDED BOOKS:**

1. Advanced Experimental Physical Chemistry by Ayodhya Sing.
2. Experimental Physical Chemistry by Daniel
3. Experimental Physical Chemistry by G.Peter Matthews.
4. Experiments in Physical Chemistry by Shoemaker.