

Course Code	Course Name	Credits
26CH652	ADVANCED PHYSICAL CHEMISTRY LAB	02

Objective

The main objectives of this advanced physical chemistry lab course is to make the students have practical knowledge about chemical kinetics, conductivity and potentiometric titrations using lab scale experimental methods and to learn proper maintenance of record observations and data interpretation.

1. Determination of rate constant of Acid hydrolysis of an ester.
2. Determination of molecular weight of substances by Rast method.
3. Freundlich's Adsorption Isotherm - Adsorption of acetic acid/ oxalic acid by charcoal.
4. Partition coefficient of iodine between carbon tetrachloride and water
5. Phase diagram of naphthalene - p-nitrotoluene system. (Simple eutectic system)
6. Phase diagram of two –component system forming a compound.
7. Determination of strength of Strong acid by Conductometry
8. Determination of strength of mixture acids by Conductometry.
9. Determination of strength of Strong acid by Potentiometry
10. Determination of strength of weak acid by Potentiometry
11. Redox titrations (MnO_4^- vs I^- / $\text{Cr}_2\text{O}_7^{2-}$ -vs Fe^{2+}) by potentiometry.
12. Determination of pH of a buffer Solution by Potentiometry

Students are required to perform and record at least eight experiments in the laboratory manual as part of the course requirements.

