

## CHEMISTRY LAB

<b>I B. TECH- II SEMESTER</b>							
Course Code	Category	Hours / Week			Credits	Maximum Marks	
		L	T	P	C	CIE	SEE
A4BS12	BSC	-	-	3	1.5	30	70

### COURSE OBJECTIVES:

The course should enable the students to:

1. Estimation of hardness and chloride content in water to check its suitability for drinking purpose.
2. To determine the rate constant of reactions from concentrations as a function of time.
3. The measurement of physical properties like adsorption and viscosity.
4. To synthesize the drug molecules and check the purity of organic molecules by thin layer chromatographic (TLC) technique.

### COURSE OUTCOMES:

The course should enable the students to:

1. Determination of parameters like hardness and chloride content in water.
2. Estimation of rate constant of a reaction from concentration – time relationships.
3. Determination of physical properties like adsorption and viscosity.
4. Calculation of  $R_f$  values of some organic molecules by TLC technique.

### LIST OF EXPERIMENTS

WEEK-1	DETERMINATION OF TOTAL HARDNESS OF WATER BY COMPLEXOMETRIC METHOD USING EDTA
WEEK-2	ESTIMATION OF AN HCL BY CONDUCTOMETRIC TITRATIONS
WEEK-3	ESTIMATION OF ACETIC ACID BY CONDUCTOMETRIC TITRATIONS
WEEK-4	ESTIMATION OF HCL BY POTENTIOMETRIC TITRATIONS
WEEK-5	ESTIMATION OF ACETIC ACID BY POTENTIOMETRIC TITRATIONS
WEEK-6	DETERMINATION OF RATE CONSTANT OF ACID CATALYSED HYDROLYSIS OF METHYL ACETATE
WEEK-7	SYNTHESIS OF ASPIRIN
WEEK-8	THIN LAYER CHROMATOGRAPHY CALCULATION OF $R_f$ VALUES. EG ORTHO AND PARA NITRO PHENOLS
WEEK-9	VERIFICATION OF FREUNDLICH ADSORPTION ISOTHERM-ADSORPTION OF ACETIC ACID ON CHARCOAL
WEEK-10	DETERMINATION OF VISCOSITY OF CASTOR OIL AND GROUND NUT OIL BY USING OSTWALD'S VISCOMETER
WEEK-11	DETERMINATION OF SURFACE TENSION OF A GIVE LIQUID USING STALAGMOMETER
WEEK-12	SYNTHESIS OF THIOKOL RUBBER
WEEK-13	DETERMINATION OF CHLORIDE CONTENT OF WATER USING ARGENTOMETRIC METHOD

<b>WEEK-14</b>	<b>DETERMINATION OF RATE CONSTANT OF ACID CATALYSED HYDROLYSIS OF METHYL ACETATE</b>
<b>REFERENCE BOOKS:</b>	
<ol style="list-style-type: none"><li>1. Senior practical physical chemistry, b.d. khosla, a. Gulati and v. Garg (r. Chand &amp; co., delhi).</li><li>2. An introduction to practical chemistry, k.k. sharma and d. S. Sharma (vikas publishing, n. Delhi).</li><li>3. Vogel's text book of practical organic chemistry 5th edition.</li><li>4. Text book on experiments and calculations in engineering chemistry – s.s. dara.</li></ol>	
<b>WEB REFERENCES:</b>	
<ol style="list-style-type: none"><li>1. <a href="http://amrita.olabs.edu.in/?sub=73&amp;brch=8&amp;sim=153&amp;cnt=2">Http://amrita.olabs.edu.in/?sub=73&amp;brch=8&amp;sim=153&amp;cnt=2</a></li><li>2. <a href="https://chem.libretexts.org/textbook_maps/analytical_chemistry_textbook_maps/map%3a_analytical_chemistry_2.0_(harvey)/11_electrochemical_methods/11.2%3a_potentiometric_methods">Https://chem.libretexts.org/textbook_maps/analytical_chemistry_textbook_maps/map%3a_analytical_chemistry_2.0_(harvey)/11_electrochemical_methods/11.2%3a_potentiometric_methods</a></li><li>3. <a href="http://fch.upol.cz/skripta/fcc_and_zvem_english/fch/adsorption%20of%20oxalic%20acid%20on%20activated%20charcoal.htm">Http://fch.upol.cz/skripta/fcc_and_zvem_english/fch/adsorption%20of%20oxalic%20acid%20on%20activated%20charcoal.htm</a></li><li>4. <a href="https://www.askiitians.com/iit-jee-chemistry/physical-chemistry/electrolytic-conductance-molar-conductance-and-specific-conductance.aspx">Https://www.askiitians.com/iit-jee-chemistry/physical-chemistry/electrolytic-conductance-molar-conductance-and-specific-conductance.aspx</a></li><li>5. <a href="https://owlcation.com/stem/tlc-thin-layer-chromatography-principle-procedure">Https://owlcation.com/stem/tlc-thin-layer-chromatography-principle-procedure</a></li></ol>	