**23SH11P2- CHEMISTRY LABORATORY**

(Common to EEE, ECE, CSE, IT) & allied branches)

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| **Course Category:** | Basic sciences | | **Credits:** | 1 |
| **Course Type:** | Practical | | **Lecture-Tutorial-Practical:** | 0-0-2 |
| **Pre-requisite:** | Fundamental concepts of Chemistry | | **Sessional Evaluation:**  **External Exam Evaluation:**  **Total Marks:** | 30  70  100 |
| **Course**  **Objectives** | Students undergoing this course are expected to learn : | | | |
| Verify the fundamental concepts with experiments. | | | |
| **Course**  **Outcomes** | At the end of the course, the student will be able to | | | |
| **CO1** | Determine the cell constant and conductance of solutions. | | |
| **CO2** | Prepare advanced polymer Bakelite materials | | |
|  | **CO3** | Measure the strength of an acid present in secondary batteries. | | |
|  | **CO4** | Analyze the IR spectra of some organic compounds | | |
| **Course Content** | Minimum of 8 experiments to be completed out of the following:  **LIST OF EXPERIMENTS**   1. Measurement of 10Dq by spectrophotometric method 2. Conductometric titration of strong acid vs. strong base 3. Conductometric titration of weak acid vs. strong base 4. Determination of cell constant and conductance of solutions 5. Potentiometry - determination of redox potentials and emfs 6. Determination of Strength of an acid in Pb-Acid battery 7. Preparation of a Bakelite 8. Verify Lambert-Beer’s law 9. Wavelength measurement of sample through UV-Visible Spectroscopy 10. Identification of simple organic compounds by IR 11. Preparation of nanomaterials by precipitation method 12. Estimation of Ferrous Iron by Dichrometry | | | |
| **Text Books** | **Reference Books:**  1. "Vogel'sQuantitative Chemical Analysis 6th Edition 6th Edition" Pearson Publications by J. Mendham, R.C.Denney, J.D.Barnes and B. SivasankarChatwal&Anand , Instrumental methods of chemical analysis, 2 Ed., Himalaya publications, 2006. | | | |

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| Contribution of Course Outcomes towards achievement of Program Outcomes (3-High, 2-Medium, 1-Low) | | | | | | | | | | | | | | |
|  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | 3 | 3 | 3 | - | - | - | 2 | 3 | - | - | 3 | 3 | - | - |
| CO2 | 3 | 3 | 2 | - | - | - | 3 | 3 | - | - | 2 | 3 | - | - |
| CO3 | 3 | 3 | 3 | - | - | - | 2 | 2 | - | - | 3 | 2 | - | - |
| CO4 | 3 | 3 | 2 | - | - | - | 2 | 3 | - | - | 3 | 2 | - | - |