|  |  |  |  |
| --- | --- | --- | --- |
| **logo University of Management & Technology**  School of Science & Technology  **Department of Chemistry** | | | |
| CH-101L PRINCIPLES OF CHEMISTRY-I LAB | | | |
| **Lecture Schedule** |  | **Semester** |  |
| **Pre-requisite** |  | **Credit Hours** | 1 |
| **Instructor(s)** |  | **Contact** |  |
| **Office** |  | **Office Hours** |  |
| **Lab Policy** | Students are expected to perform experiments (as per attached list)related to the course work, analyze the data, draw conclusions, and write a report. Grades will be awarded based on student’s lab reports and a final exam in the lab. | | |
| **Grading**  **Policy for Lab work** | Laboratory Reports 40 Marks  Final Examination 60 Marks | | |
| **Attendance**  **Policy** **for Lab** | Students missing more than 20% of the labs will receive an “F” grade in the Lab work. | | |

**List of Experiments**

|  |  |  |
| --- | --- | --- |
| **Week** | **Ex No.** | **Title of Experiment** |
| 1st | Lab Orientation | |
| **Introduction to Chemistry** | | |
| 2nd | 1 | Introduction to general experimental and safety guidelines and lab apparatus. |
| **Instrumental Measurements** | | |
| 3rd | 2 | Calculate length of copper rod, volume of rectangular solid, volume of liquid, temperature of hot and cold water and weight of solid powder. |
| **Molar Solution of Solids** | | |
| 4th | 3 | Preparation and standardization of 0.1M solution of NaOH. |
| **Molar Solution of Liquids** | | |
| 5th | 4 | Preparation and standardization of 0.3 M solution of Hydrochloric acid. |
| **Empirical Formula** | | |
| 6th | 5 | Determine empirical formula of Magnesium oxide. |
| **First Order Reaction** | | |
| 7th | 6 | Study the kinetics of dissolution of magnesium metal in dilute HCl. |
| **Second Order Reaction** | | |
| 8th | 7 | Study the kinetics of decomposition of sodium thiosulphate by a mineral acid. |
| **Zero Order Reaction** | | |
| 9th | 8 | Confirm the reaction between iodine and mineral acid is zero order reaction. |
| **Conductance Measurement** | | |
| 10th | 9 | Design an experiment to determine the cell constant of a conductivity cell at 25°C. |
| **Electrochemistry & Nernst Equation** | | |
| 11th | 10 | Determine the cell potential (voltage) of different cells and verify by Nernst equation. |
| **Angle of Rotation by Polarimeter** | | |
| 12th | 11 | Determine the angle of rotation of an optically active compound. |
| 13th | **Makeup Classes Week** | |
| 14th | **Lab. Final Examination** | |
| 15th | Week for Preparation of Theory Final Examination | |