

Raiganj Surendranath Mahavidyalaya
Course Outcomes: B.Sc. in Chemistry (Honours)

| Course Name | Course Outcomes |
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| CEMHT-1 Organic Chemistry – I | Understand basic concepts of organic chemistry including basic reaction mechanisms, stereochemistry and optical activities |
| CEMHP-1 Organic Chemistry-I (Practical) | To be able to identify organic compounds and measure their melting and boiling points |
| CEMHT-2 Physical Chemistry – I | To understand the basic concept of kinetic theory of gases and know how to solve numerical problems related to that topic. Understanding of chemical kinetics, rates of reactions, problem solving. Basic concepts of 1 st and 2 nd law of thermodynamics, able to write and solve differential equations; differentiate between partial and absolute derivatives; |
| CEMHP-2 Physical Chemistry – I (Practical) | Able to carry out time bound titration experiments related to chemical kinetics; able to use concept of buffer solutions to determine pH |
| CEMHT-3 Inorganic Chemistry-I | Understand concepts behind formation of quantum numbers, structure of atoms and understanding of periodic table, understand concept of redox titrations, basics of electrochemistry and acid-base chemistry |
| CEMHP-3 Inorganic Chemistry- I (Practical) | Able to carry out acid-base and redox titrations in the laboratory |

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| CEMHT-4 Organic Chemistry -II | Advanced understanding of stereochemistry and conformation of organic compounds including relation to thermodynamics and kinetics |
| CEMHP-4 Organic Chemistry – II (Practical) | Preparation of Simple Organic compounds using laboratory procedures |
| CEMHT-5 Physical Chemistry – II | Understand concept of quantum mechanics and mathematics involving operators; Understand of conductance and transport phenomenon; Able to understand and apply thermodynamical concepts on reaction equilibrium and state of chemical properties |
| CEMHP-5 Physical Chemistry – II (Practical) | Use of simple instruments to carry out variety of Physical chemistry experiments such as conductometric titration, determination of equilibrium constant and able to perform calculation and analyse the data/result |
| CEMHT-6 Inorganic Chemistry – II | Detailed understanding of chemical bond formation including MO theory, able to predict nature of any chemical bond and able to predict structure of any molecule, understand radioactivity related principles |
| CEMHP-6 Inorganic Chemistry – II (Practical) | Able to estimate various elements/compounds via quantitative methods with industrial importance |
| CEMHT-7 Organic Chemistry – III | Detailed understanding of aliphatic and aromatic chemistry, prediction of any organic reactions and related mechanisms, detailed understanding of organometallics chemistry, reaction mechanism and catalytic processes involving organometallics |
| CEMHT-8 Physical-III | Able to apply thermodynamical concepts on multi-phase systems, electrochemistry, Basic understanding of quantum chemistry with regard to hydrogen like atoms |

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| CEMHP-8 Physical-III (Practical) | Application of knowledge of thermodynamics and related phenomenon in laboratory Potentiometric titration, Phase diagram, pH metric titration. |
| CEMHT-9 Inorganic Chemistry – III | Detailed understanding of various properties of compounds of periodic table elements including noble gasses, basic understanding of coordination chemistry and IUPAC nomenclature of coordination compounds |
| CEMHP-9 Inorganic Chemistry – III (Practical) | Able to prepare coordination compounds and inorganic complexes in the laboratory and gather knowledge on complexometric titration. |
| CEMHT-10 Organic Chemistry – IV | Able to understand and predict rearrangement mechanisms and synthesis of organic compounds; Able to decipher spectra of organic compounds and identify organic molecules via spectroscopic analysis |
| CEMHP-10 Organic Chemistry – IV (Practical) | Estimation of various organic compounds of industrial importance |
| CEMHT-11 Inorganic- IV | Complete understanding of Coordination Compounds, their structure, magnetic properties and ability to explain colour of compounds with help of spectroscopy and CFSE. |
| CEMHP-11 Inorganic Chemistry – IV (Practical) | Able to perform chromatographic experiments on inorganic compounds in the laboratory |
| CEMHT-12 Organic Chemistry – V | Understanding concept of Heterocyclic compounds, understand apply the effect of organic biomolecules in chemistry |
| CEMHP-12 Organic Chemistry – V (Practical) | Able to perform spectroscopic analysis of basic organic compounds |

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| CEMHTDSE -1A Advance Physical (Theory) | Understanding concept of Solid and crystal, statistical thermodynamics, specific heat of solid. Thermodynamics 3 rd law. |
| CEMHPDSE -1A Advance Physical (Practical) | Understanding the computer programming based on numerical methods. |
| Analytical Chemistry (Theory) | Understand and apply various analytical techniques to analyse various problems related to chemical compounds and reactions |
| Analytical Chemistry (Practical) | Understanding concept of Chromatographic separation, analysis of soil. |
| CEMHSE-1B Basic analytical chemistry | Understanding concept of complexometric, soil analysis, analysis of water, chromatography technique. |
| CEMHT-13 Inorganic Chemistry – V (Theory) | Complete understanding of various biological and physiological processes involving metals and organic compounds |
| CEMHP-13 Inorganic Chemistry – V (Practical) | Able to analyse and detect cations and anions present in a mixture of Inorganic compounds |
| CEMHT-14 Physical Chemistry – IV (Theory) | Able to apply the knowledge of molecular spectroscopy to analyse phenomena related to chemical compounds, To know details about surface energy and surface tension; Classification, Adsorption Isotherms and applications of adsorption understand about the photochemistry |
| CEMHP-14 Physical Chemistry – IV (Practical) | To knowledge about verification of Beer and Lambert's Law for KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ solution spectrophotometrically, how to determine surface tension of a liquid. |
| CEMHTDSE-3B Industrial Chemistry (Theory) | Understanding concept of various industrial importance and application Glass, Cements, Fertilizers and Surface coating. |

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| CEMHPDSE-3B Industrial Chemistry (Practical) | To know about analysis of alloy, cements and metal estimation. |
| CEMHTDSE-4 Green Chemistry (Theory) | Understanding of Green chemistry, Principle of green chemistry, example of green synthesis of |
| CEMHPDSE-4 Green Chemistry (Practical) | Able to perform reaction using green solvent and using renewable resources. |
| CEMHSE-2A Pharmaceutical Chemistry | Complete understanding of drug discovery and pharmaceutical, fermentation and production of some organic compound. |