DEPARTMENT OF CHEMISTRY
BASIRHAT COLLEGE

CHEMISTRY GENERAL

Course Outcome

SEMESTER I

1A. COURSE NAME: Atomic structure, chemical periodicity, acids and bases,redox reactions, general organic chemistry & aliphatic hydrocarbons.
COURSE CODE: CEMGCOR01T (CREDIT 04)

CO1: In section A of the curriculum some fundamental topics of Inorganic Chemistry-I like atomic structure, Chemical Periodicity, Acids and bases and Redox reactions are discussed.
CO2: In Section B: Some Fundamentals of Organic Chemistry about *Electronic displacement like* inductive effect, resonance and hyperconjugation etc. are discussed.
CO3: Some topics of Stereochemistry like isomerism, chirality, optical activity, elements of symmetry,nomenclature etc. are discussed.
CO4: Nucleophilic Substitution and Elimination Reactions are discussed.
CO5: Functional group approach for the following reactions (preparations & reactions) to be studied in context to their structures: alkanes, alkenes and alkynes.

1B. COURSE NAME: Atomic structure, chemical periodicity, acids and bases,redox reactions, general organic chemistry & aliphatic hydrocarbons.
COURSE CODE: CEMGCOR01P (CREDIT 02)

CO1: In Section A: Some simple experiments of Inorganic Chemistry by titrimetric method are to be done.
CO2: In Section B: Organic Chemistry parts some tests of organic functional group and elemental analysis are to be done.

SEMESTER II

2A. COURSE NAME: States of matter & chemical kinetics, chemical bonding & molecular structure, p-block elements
COURSE CODE: CEMGCOR02T (CREDIT 04)

CO1: In Section A: Physical Chemistry-I part Kinetic Theory of gases, ideal gas, deviation from ideality,Real gases, Maxwell's distribution of speed and kinetic energy, viscosity etc. are discussed.
CO2: Chemistry of liquids and solids are discussed keeping in mind the following points: surface tension, viscosity, crystal systems, unit cells, Bravais lattice types, Symmetry elements; Laws of Crystallography, Defects in crystals; Glasses and liquid crystals.
CO3: Some points are focused of Chemical Kinetics e.g., Order and molecularity, rate, determination of order of a reaction, temperature dependence of rate constant, Arrhenius equation etc.
CO4: In Section B: Inorganic Chemistry-II includes Chemical Bonding and Molecular Structure. Here different aspects of ionic and covalent bonding with their fundamental approach are studied.
CO5: Comparative study of p-block elements highlighting the following points: Electronic configuration, common oxidation states, inert pair effect, etc.

DEPARTMENT OF CHEMISTRY
BASIRHAT COLLEGE

2B. COURSE NAME: States of matter & chemical kinetics, chemical bonding & molecular structure, p-block elements LAB
COURSE CODE: CEMGCOR02P (CREDIT 02)

CO1: In Section A: Physical Chemistry, experiments of surface tension, viscosity, study the kinetics of some reactions are to be done.
CO2: In Section B: Inorganic Chemistry, Qualitative semimicro analysis of mixtures containing radicals are to be done. Emphasis should be given to the understanding of the chemistry of different reactions.

SEMESTER III

1A. COURSE NAME: CHEMICAL ENERGETICS, EQUILIBRIA, ORGANIC CHEMISTRY-II. COURSE CODE: CEMGCOR03T (CREDIT 04)

CO1: In Section A: Physical Chemistry-II, Laws of thermochemistry, Statement of the first and second law of thermodynamics, thermodynamic concepts of chemical equilibrium, ionic equilibrium and other related aspects are concerned.
CO2: In Section-B: Organic Chemistry-II,Preparations and various reactions of aromatic hydrocarbons, organometallic compounds, aryl halides, alcohols, phenols, ethers and carbonyl compounds are discussed.

1B. COURSE NAME: CHEMICAL ENERGETICS, EQUILIBRIA, ORGANIC CHEMISTRY-II LAB. COURSE CODE: CEMGCOR03P (CREDIT 02)

CO1: In Section A: Physical Chemistry-LAB, some simple experiments of Thermochemistry and pH are to be done.
CO2: In Section B: Organic Chemistry-LAB, Identification of a pure solid and liquid organic compound is to be done.

SEMESTER IV

1A. COURSE NAME: SOLUTIONS, PHASE EQUILIBRIA, CONDUCTANCE, ELECTROCHEMISTRY & ANALYTICAL AND ENVIORNMETAL CHEMISTRY-I.
COURSE CODE: CEMGCOR04T (CREDIT 04)

CO1: In Section A: Physical Chemistry-III part, chemistry of Ideal solutions and Raoult's law and related aspects are discussed.
CO2: In this section phase rule and phase diagram of one and two components systems are to be studied.
CO3: Theories of Conductance, electromotive force, electrochemical cells, qualitative discussion of potentiometric titrations etc. are discussed.
CO4: In Section B: Analytical and Environmental Chemistry part, some basic principles of gravimetric analysis, volumetric analysis, chromatography and few estimation with these process are to be done.
CO5: In this section a study of environmental chemistry about hydrosphere and lithosphere, problems and probable solutions are dealt with.

DEPARTMENT OF CHEMISTRY
BASIRHAT COLLEGE

1B. COURSE NAME: SOLUTIONS, PHASE EQUILIBRIA, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL ORGANIC CHEMISTRY-II LAB. COURSE CODE: CEMGCOR04P (CREDIT 02)

CO1: In Section A: Physical Chemistry-LAB part, some experiments of distribution Law, phase diagram,
conductometric and potentiometric titrations are to be done.

CO2: In Section B: Analytic and Environmental Chemistry-LAB part, experiments of total hardness of water, PH of an unknown solution, determination of the rate constant for the acid catalysed hydrolysis of an ester, strength of the H2O2 sample and solubility of a sparingly soluble salt are discussed.

SEMESTER V

DSE for CHEMISTRY GENERAL

1A: COURSE NAME: POLYMER CHEMISTRY. CODE: CEMGDSE01T (CREDIT 04)
This course is same with **CEMA DSE06T.**

1B: COURSE NAME: POLYMER CHEMISTRY LAB. CODE: CEMGDSE01T (CREDIT 02)
This course is same with **CEMA DSE06P.**

2A: COURSE NAME: GREEN CHEMISTRY. CODE: CEMGDSE02T (CREDIT 04)
This course is same with **CEMA DSE04T.**

2B: COURSE NAME: GREEN CHEMISTRY LAB. CODE: CEMGDSE02P (CREDIT 02)
This course is same with **CEMA DSE04P.**

SEMESTER VI

DSE for CHEMISTRY GENERAL

3A: COURSE NAME: INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE. CODE: CEMGDSE03T (CREDIT 04)
This course is same with **CEMA DSE05T.**

3B: COURSE NAME: INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE. CODE: CEMGDSE03P (CREDIT 02)
This course is same with **CEMA DSE05P.**

4A: COURSE NAME: ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY. CODE: CEMGDSE04T (CREDIT 04)

CO1: In Section A: Inorganic Chemistry-4 part, Chemistry of 3d metals, Organometallic Compounds, A brief introduction to bio-inorganic chemistry and Role of metal ions present in biological systems are discussed.

CO2: In Section B: Organic Chemistry-4 part, following topics are to be studied: Polynuclear and heteronuclear aromatic compounds, preparation and reactions of active methylene compounds, application of spectroscopy to simple organic molecules.

4B: COURSE NAME: ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY LAB. CODE: CEMGDSE04P (CREDIT 02)

CO1: In Section A: Inorganic Chemistry part, separation of mixtures by chromatography, preparation of some complexes and measurement of their conductivity are to be done.

CO2: In Section B: Organic Chemistry part, systematic qualitative analysis of organic compounds possessing monofunctional groups and preparation of one derivatives to be done.