MAIRANG PRESBYTERIAN SCIENCE COLLEGE, MAIRANG

DEPARTMENT OF CHEMISTRY

MAIRANG PRESBYTERIAN SCIENCE COLLEGE ESTD:- 2006 MAIRANG

2.6.1 PROGRAMME OUTCOMES:

1. To understand basic facts and concepts in chemistry.
2. To have knowledge about fundamentals and scientific theories.
3. Students are able to apply appropriate techniques for the qualitative and quantitative analysis of chemicals in laboratories.
4. To understand environmental pollution due to chemicals and to develop new methods for chemical pollution control.
5. To develop problem solving skills.
6. To know the role of chemistry in nature and society.
7. To develop skills in handling of apparatus, chemicals and instruments.
8. To facilitate students in pursuing further studies in chemistry.

COURSE OUTCOMES:

SEMESTER – I

Chem EH-101	***Inorganic***	At the end of the course, students will be able to acquire the basic ideas about the structure of atom, to study nuclear particles, nucleus binding energy, and radioactivity. Students will be able to understand chemical periodicity, covalent bonding and ionic bonding.
	Organic	Students will be able to understand about hybridisation of orbitals, acids and bases, stereochemistry, hydrocarbons and aromatic hydrocarbons.
	Physical	Students will be able to learn about kinetic theory of gases, real and ideal gases, properties of liquids, crystalline state. They will be able to determine order, molecularity and rates of chemical reactions.

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SEMESTER – II

Chem EH-201	***Inorganic***	At the end of the course, students will be able to understand concept of acids and bases, use of indicators, pKa and pH, redox reactions and chemical fertilizers.
	Organic	Students will be able to learn about nucleophilic substitutions, elimination reactions, preparation and properties of alcohols, phenols, aldehydes and ketones.
	Physical	Students will be able to learn about laws of thermodynamics, internal energy, types of systems, exothermic and endothermic reactions, different types of enthalpies.

SEMESTER – III

Chem EH-301	***Inorganic***	At the completion of the course, students will learn about methods of preparation, properties and uses of s-block and d- and f-block elements.
	Organic	Students will be able to understand about preparation, properties and uses of carboxylic acids, organometallic compounds, nitro compounds and amines. They will learn about synthesis of organic compounds from active methylene compounds.
	Physical	Students will learn about Carnot cycle and its efficiency, thermodynamic parameters, laws of chemical equilibrium, dilute solutions and colligative properties.

SEMESTER – IV

Chem EH-401	***Inorganic***	At the end of the course, students will be able to learn about synthesis, properties and applications of organometallic compounds, inorganic polymers, interhalogens and polyhalides. They will gain knowledge about coordination compounds, ligands, Valence Bond Theory and Crystal Field Theory.
	Organic	From this course, students will be able to learn about structure, synthesis, properties and, uses of carbohydrates, aminoacids, urea, drugs,

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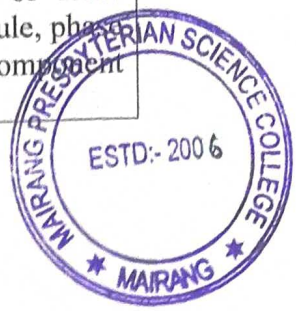
		heterocyclic compounds, fats, oils and dyes.
	Physical	Students will understand the concept of ionic equilibrium, electrochemical cell, phase rule, phase diagrams of one component and two component systems.



SEMESTER – V

Chem EH-501	***Inorganic***	From this course, students will be able to learn about molecular symmetry, symmetry operations, symmetry elements, complexometric titrations, applications of organic reagents in inorganic analysis, crystal field theory, magnetochemistry and error analysis.	
Chem EH-502	***Organic***	From this course, students will be able to learn about structures, synthesis and applications of peptides and proteins, applications of vitamins, polymers, organic synthesis, uses of inorganic reagents in organic synthesis, green chemistry and R and S configurations.	
Chem EH-503	***Physical***	From this course, students will be able to learn about distribution law, critical phenomena in gases, surface tension, viscosity, refractive index, symmetry elements in crystals, kinetics of complex reactions and molecular spectroscopy.	

SEMESTER – VI

Chem EH-601	***Inorganic***	At the end of this course, students will be able to learn about properties and applications of organometallic compounds, importance of elements in biological system, spectroscopic methods in inorganic chemistry, reactivity of coordination compounds, nanomaterials and their important applications.	
Chem EH-602	***Organic***	Students will be able to learn about synthesis and physiological action of nicotine and cocaine. They will be able to understand about action of enzymes, nucleic acids, photochemical reactions, pericyclic reactions, applications of uv and visible spectroscopy, nuclear magnetic resonance spectroscopy and mass spectroscopy.	
Chem EH-603	***Physical***	From this course, students will be able to learn about partial molar quantities, chemical potential,	

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		maxwell's relations, activity and activity coefficient, EMF of a cell ant it's measurements, applications of electrodes, potentiometric titrations, black body radiation, heat capacity of solids, Boltzmann distribution, molecular partition functions and it's significance.	

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