PROGRAMME SPECIFIC OUTCOME

Sufficient reference books, well equipped laboratories, sophisticated instruments, digital and computational facilities, group work along with effective teaching, learning & evaluation are provided to the chemistry students by Chemistry Department for fruitful running of the UG courses in P. K. College, Contai. As a result from the above facilities the following outcomes are revealed.

Depth and breadth of knowledge

- Student will be able to gather the fundamental scientific principles in the different fields of chemistry (analytical, inorganic, organic and physical) and apply these principles to solve problems.

- They will be able to apply the relevant knowledge to solve the problems that emerge from the broader interdisciplinary subfields (e.g. life, environmental and materials sciences). As a result they will be able to explore the new area of research and education.

Familiar with methodologies

- Students will be able to assemble a lot of knowledge about various procedures of chemical analysis, synthesis and monitoring of chemical reactions. They can also learn the techniques for safe use and handling of chemicals.

- The students are able to use modern online searching and retrieval methods to obtain information about different chemicals, synthetic procedures or any issue relating to chemistry.

Application of knowledge

- Students will be able to identify and describe the underlying principles behind the chemical techniques relevant to academia, industry and government in addition.

- Under proper guidance they will be able to apply the methodologies in order to conduct new chemical synthesis (during project work), analysis or other chemical investigations.

- Students will be able to develop a confirmable hypothesis, execute experiments related to research, compliable raw data and provide conclusion.

Communication skills

- Students can gain the power to prepare logical, organized and concise write up and oral and poster presentations that effectively communicate chemical content to other people.

Awareness of the limits of knowledge

- The students can recognize assumptions and limitations in the scientific models and simulations and also propose their possible impact on the results.
- The can achieve the capability to identify source of errors in analytical experiment.

Scope for future in interdisciplinary field

- Through proper learning of full UG course in chemistry, a student can get various opportunities for their future work in interdisciplinary field like biochemistry, nano fields, polymer science and industrial chemistry.

Job Opportunity

- After completion of B.Sc. UG course in Chemistry, the majors are able to gain experiences in critical thinking and scientific inquiry in the performance, design, interpretation and documentation of laboratory experiments. Finally, they will be sufficiently trained to get employment in Govt. sector, non Govt. sector or in chemical/ pharmaceutical industry.

B.Sc. Honours in Chemistry

Course Code	Course Name	Course Outcome
CEMHCC01	C1T, C1P	Understanding structure, bonding, stability, and physical properties of organic molecule and reaction intermediate, MO, arometicity, The capability to separate the components of binary solid mixture by using common laboratory reagents, determine the boiling point of liquid organic
CEMHCC02	C2T, C2P	knowledge about the different types of thermodynamics laws, properties of various thermodynamic parameters and functions, which help us to predict influence of different conditions on the chemical reactions.concept of reaction kinetics,
CEMHCC03	C3T, C3P	Knowledge about structure of atom, concept of acisd and base and stability of a reaction with respect to acid basre, concept of redox and presipitation reaction, gravimetric estimation of metal ions
CEMHCC04	C4T, C4P	Lots of knowledge about tautomerism, reaction kinetics, free radical substitution reaction, and elemination reaction Apractical idea about nitration, hydrolisys, diazotisation, bromonation
CEMHCC05	C5T, C5P	make a conseptual sense about viscosity, conductance and transportnumber, chemical equilibrium and chemical potential.abrief knowledge about quantam mechanics. Practical knowledge abot partition coeefficient, conductometric titration, determination of Ka
CEMHCC06	C6T, C6 P	Knowledge about ionic bond, covalent bond, molecular diagram of small molecule, weak chemical forces and proper, application of radioactive elements. Practical knowledge about the gravimetric estimation of metal ions
CEMHCC07	C7T, C7P	knowledge about the chemistry of alken and alkynes, aromatic substitution, and a vast knowledge abou organometalics and carbonyl compounds. Practical idea about special elements, detection of functional group,
CEMHCC08	C8T, C8P	Vast knowledge abot colligative property, Phase rull, binary solution, ionic equilibrium, electromotive forse, and quantam chemistry. Practical idea about potentiometric titration, phase diagram, ph metric titration, and determination of Ksp.
CEMHCC09	C9T, C9P	Concept of metalargy, s, p block element, nobel gas, coordination chemistry and inorganic polymer. A practical idea abour gravimetric estimation of metal ions, and preparation of complex compounds
CEMHCC10	C10T, C10P	Knowledge about organis amins and nitro compounds, rearrangements reaction, organic spectroscopy like IR, NMR, UV. Practical idea about estimation of biologically important compounds like glucose, sucrose, vit C etc.
CEMHCC11	C11T, C11P	Vast knowlwdge about the formation, structure and property of coordination compound. Adetail idea about the proprty of transition elements, lanthanides and actenides.Practically traing abot the spectroscopic separation of the complexes and gravimetric estimation of metal ions.
CEMHCC12	C12 T, C12P	A detail knowledge about heterocyclic compounds, clic steriochemistry, carbohydrates, pericyclic reaction and biomolecules. A hand setting about chromatograpic separation and spectroscopic analysis of organic compounds.
CEMHCC13	C13T, C13P	A detail knowledge about bioinorganic chemistry, organometalic chemistry and reaction kinetics by using coordination compounds. A practical knowledge about the identification cationnic and anaionic radicle.
CEMHCC14	C14T, C14P	A detail concept of ritation, vibration, raman and NMR spectroscopy. A conceptual idea abot surface phenomena and photochemistry. Practically

		determination of surface tension, pH, CMC and kitectic study og a reaction.
CEMHGE01	GE1T1, GE1P1	conceptual idea about an atom, vast knowledge abou periodic table, acid base , redox reaction, aliphaic hydrocarbon, steriochemistry and fundametal organic chemistry, gravimetric estimation of metal ions, detection of organic fuctional grup.
CEMHGE02	GE2T, GE2P	concept about kinetic theory of Gas and real gas, Property of liquids and solids, vast knowledge about reaction kinetics, bonding and molecular structure, p block element. A practical idea abou surface tention and viscosity measurement
CEMHGE03	GE3T, GE3P	Fundamental concept of chemical energy, Stability of a reaction , concept of ionic equilibrium. A clear idea about organometalics, alcohols, alkyl halide and carbonyl compounds. A practical idea abot determination of enthalpy, heat capacity, PH of various substance
CEMHGE04	GE4T, GE4P	Detail concept about solution, phase equilibria, conductante and electromotive force. A short idea about environmental chemistry. Practical learning abot potentiometric titration, conductometric titration and detection critical solution temp.
CEMHSE01	SEC 1T, SEC1P	Synthesis and Properties of some pestisides and practical knowledge abot the preparation of pestisides.
CEMHSE02	SEC2T, SEC2P	knowledge about the chemistry within the cosmetics and perfumes. Practically the preparation of some special perfume and cosmetics.
CEMHDS01	DSC 1T, DSC1P	A depth of knowledge about the crystal structure, statistical thermodynamics and polymer. A hand on experiment about the developming programming of chemistry equations. .
CEMHDS02	DSC2T, DSE2P	conceptual idea about different spectrosopic tewchnique to identify an organic compounds. A Knowledge about the separation techniques of mixture of organic compounds. A practical knowledge about solvent extraction and determination of pH.
CEMHDS03	DSC3T, DSC3P	A detail idea about the synthesis and insustrial importance of some special inorganic materials like glass, ceramics and cement. Conceptual idea avout surface coarting, batteries, fertilizers, alloyes and chemical explosives.Practically the estimation of main materials indiifferent industrially important materials.
CEMHDS04	DSC4T, DSC4P	A detail concept about the defination and property and classification of polymers. Different types of practical knowledge related to polymer chemistry.