RK (PG) College Shamli UP
Department of Chemistry

Programme outcomes: B.Sc Chemistry

Department of Chemistry	After successful completion of three year degree programme in Chemistry, a student should be able to;
Programme outcomes	● Gain sound knowledge about basic fundamentals of Chemistry ● Understand applications of chemistry in daily life ● Broadly understand about the different branches of chemistry like organic, inorganic, physical, environment and analytical chemistry ● Understand about different type of environment pollution and can open up new methods for environmental pollution control ● Develop problem solving skills which is required to solve various problems related to chemistry ● Develop analytical skills which is required to handle various instruments and apparatus in chemistry laboratory ● Apply different techniques for the quantitative and qualitative analysis of chemicals in laboratories ● Gain factual chemical knowledge concerning the properties of substance, molecules and atoms ● Work independently as well as in team ● Effectively use technologies and instrumentation to gather and analyse data

Course outcomes: B.Sc Chemistry
Year- I

Course	**Outcomes** After completion of these courses, students will be able to;
Inorganic chemistry	● Understand about basic atomic structure ● Easily understand about chemical bonding and periodic properties ● Understand about basic features of S-block, P-block and noble gases
Organic chemistry	● Understand about basic structure and bonding in

	organic molecules ● Understand stereochemistry and mechanism of organic reactions ● Understand about the reactions and properties of aromatic compounds ● Understand about the properties and chemical reactions of alkenes, cycloalkenes, alkynes,alkyl and arul halide
Physical chemistry	● Understand the application of mathematics and computers in chemistry ● Easily understand the concepts of solid, liquid, gaseous and colloidal state ● Understand the kinetics of chemical reactions and different types of catalysed reactions
Practical chemistry	● Understand about basic laboratory techniques ● Understand about semi-micro analysis ● Easily determine the viscosity and surface tension of given solution

Course outcomes: B.Sc Chemistry
Year- II

Course	**Outcomes** After completion of these courses, students will be able to;
Inorganic chemistry	● Understand about coordination chemistry ● Understand about basic properties of transition, lanthanide and actinide elements ● Understand acid-bases and non-aqueous solvents ● Understand about oxidation and reduction reactions
Organic chemistry	● Understand about UV and IR spectroscopy ● Understand the properties and chemical reactions of alcohol, phenol, ether, epoxides, aldehydes, ketones, carboxylic acids and nitrogen containing compounds
Physical chemistry	● Understand about the principles of thermodynamics and thermochemistry ● Understand about the basics of electrochemistry ● Understand the concept of chemical and phase equilibria
Practical chemistry	● Learn about volumetric and gravimetric analysis

	● Understand about different types of chromatography experiments and their applications ● Identify the unknown organic compound and prepare their suitable derivatives ● Construct the phase diagram of two component system ● Determine enthalpy of different solutions

Course outcomes: B.Sc Chemistry
Year- III

Course	Outcomes After completion of these courses, students will be able to;
Inorganic chemistry	● Understand metal-ligand Bonding in transition metal complexes ● Understand magnetic and optical properties of transition metal complexes ● Understand basic bio-inorganic and organometallic chemistry ● Learn about silicones, phosphazenes, hard and soft bases
Organic chemistry	● Understand about the nuclear magnetic resonance spectroscopy (NMR) ● Understand about organometallic, organosulphur and heterocyclic compounds ● Learn about carbohydrates, amino acids, nucleic acids, fats, oils, detergents, synthetic polymers and synthetic dyes ● Learn about organic synthesis via enolate formation
Physical chemistry	● Understand about quantum mechanics and different types of spectroscopy ● Understand the concept of photochemistry, solutions and colligative properties
Practical chemistry	● Synthesis and analysis of transition metal complexes ● Understand and handle different laboratory techniques like steam distillation and column chromatography ● Analysis of binary organic mixture ● Understand the principle of using conductometer and handle various experiments on conductomete ● Find out molecular weight of a non-volatile solute by Rast camphor method