



PSC & KVSC Government College
(Affiliated to Rayalaseema University, Kurnool)
Bommalasatram, Nandyal, Nandyal District
Andhra Pradesh - 518502

Department of Chemistry

PSOs and COs
B.Sc., (Chemistry)

PROGRAMME SPECIFIC OUTCOMES (PSOs)

With the goal of enabling students to gain a comprehensive understanding of chemistry knowledge as a field of study, both theoretically and practically, the Department of Chemistry of PSC & KVSC Government College, offers a three-year undergraduate program (BSC Chemistry) that span six semesters. The following competences and skills will be acquired by students upon successfully completing the B.Sc. chemistry Degree Program.

PSO 1	Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry.
PSO 2	Solve the problem and also think methodically, independently and draw a logical conclusion.
PSO 3	Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions.
PSO 4	To inculcate the scientific temperament in the students and outside the scientific community
PSO 5	Use modern techniques, various equipments and Chemistry softwares.
PSO 6	Create an awareness of the impact of chemicals on the environment, society, and development outside the scientific community

COURSE OUTCOMES (COs)

Semester-I

Course Code: C1

Course Name: Inorganic and Physical Chemistry

	Upon completion of this course, the student will be able to:	PSOs	POs
CO 1	Understand the basic concepts of p, d and f-block elements	1,3	1,3,4
CO 2	Understand the reasons behind various properties exhibited by solid, liquid and gases.	1,2	1,3,4
CO 3	Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses	2	1,4
CO 4	Understand the basic concepts of qualitative analysis of inorganic salt	4	1,3,7
CO 5	Understand different types of molecules formed by the elements of varied shapes and the theories explaining it.	1	3,4
CO 6	Understand the properties of liquid crystals	6	6,7,8

Semester-II

Course Code: C2

Course Name: Organic and general chemistry

	Upon completion of this course, the student will be able to:	PSOs	Pos
CO 1	Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt.	1	1,3,4
CO 2	Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.	3	3,4,8
CO 3	Learn and identify many organic reaction mechanisms including Free Radical Substitution, Electrophilic Addition and Electrophilic Aromatic Substitution.	1,2	1,3,4
CO 4	Correlate and describe the stereochemical properties of organic compounds and reactions.	1,6	3,4
CO 5	Understand the aromatic and electrophilic substitution behaviour of benzene.	1,3	1,4,7
CO 6	Understand the interactions of matter at surface and interactions matter in solutions.	2	1,8

Semester-III

Course Code: C3

Course Name: Organic Chemistry and Spectroscopy

	Upon completion of this course, the student will be able to:	PSOs	Pos
CO 1	Understand preparation, properties and reactions of haloalkanes, haloarenes and oxygen containing functional groups.	1	1,3,4
CO 2	Use the synthetic chemistry learnt in this course to do functional group transformations.	3	3,4,8
CO 3	To propose plausible mechanisms for any relevant reaction	2,4	3,4,9
CO 4	Understand the concepts of NMR and IR spectroscopy and apply them in determining the structure of compounds.	5,6	1,3,4,6
CO 5	Understand the different type of reaction exhibited by different functional compounds.	1,3	1,3,4

Semester-IV

Course Code: C4

Course Name: Inorganic, Organic and Physical Chemistry

	Upon completion of this course, the student will be able to:		
CO 1	Learn about the laws of absorption of light energy by molecules and the subsequent photochemical reactions, quantum efficiency	1	1,3,4
CO 2	Understand the laws of thermodynamics and able to apply the laws in determining nature of reactions.	1,3	1,3,4
CO 3	Understand the reasons for physical and chemical properties of carbohydrates, amino acids and understand their biological importance and amino acids	2,6	1,3,7,8
CO 4	Understand the basic concepts involved in chemical properties of heterocyclic and nitrogen-based compounds.	1	1,3,4
CO 5	Understand the chemical properties of heterocyclic and nitrogen based compounds.	3,4	1,3,4

Course Code: C5

Course Name: Inorganic and Physical Chemistry

	Upon completion of this course, the student will be able to:	PSOs	Pos
CO 1	Understand theories related to co-ordination compounds, Crystal field effect to understand the chemical and physical properties of co-ordination compounds.	1	1,3,4
CO 2	Learn substitution reactions in square planar compounds and understand stability of the compounds.	1,2	1,3,4
CO 3	Understand the Phase diagrams of mono and bi-component systems.	2,4	1,3,8
CO 4	Understand the theories explaining the behaviour of electrolytes. Able to apply them to understand conductance of electrolytes.	1,6	1,3,4
CO 5	Understand the principles of electrochemistry involved in conversion of chemical energy to electrical energy (cells).	4,6	1,3,7,8
CO 6	Understand reaction rate, rate laws and apply the principles of order of reaction kinetics	2	1,3

Semester-V

Course Code: 6B

Course Name: Analytical Methods in Chemistry-I

	Upon completion of this course, the student will be able to:	PSOs	POs
CO 1	Identify the importance of solvent extraction and ion exchange method.	2,6	1,7,8
CO 2	Acquire knowledge on the basic principles of volumetric analysis and gravimetric analysis.	4	1,3,5
CO 3	Demonstrate the usage of common laboratory apparatus used in quantitative analysis. Learn concentration terms such as molarity, molality and normality.	4,6	7,8
CO 4	Understand the theories of different types of titrations	1,2	1,3
CO 5	Gain knowledge on different types of errors and their minimization methods.	1,2	1
CO 6	Demonstrate skills related to analysis of water using different techniques.	4,6	1,7,8

Course Code: 7B

Course Name: Analytical Methods in Chemistry-II

	Upon completion of this course, the student will be able to:	PSOs	POs
CO 1	Identify the importance of chromatography in the separation and identification of compounds in a mixture.	5,6	1,3,7
CO 2	Acquire a critical knowledge on various chromatographic techniques.	1,5	7,8,10
CO 3	Understand the principles of spectrophotometry in the determination of concentration of metal ions.	1,5	1,7
CO 4	Understand the principles of spectro chemistry in the determination of metal ions.	2,5	1,3,7
CO 5	Comprehend the applications of atomic spectroscopy.	3,6	1,3