ANDHRA CHRISTIAN COLLEGE: GUNTUR
DEPARTMENT OF CHEMISTRY

CO'S AND PO'S

PROGRAMME SPECIFIC OUTCOMES(PSOs) OF THESE PROGRAMMES

PS01	**Interpret principles, classifications, concepts, theories and mechanisms**
PSO2	**Analyze hypothesis, procedures, properties, experimental facts and draw conclusions.**
PSO3	**Apply techniques in solving problems, sample analysis and production**
PSO4	**Develop communicative competence, creative and critical thinking, practical, technical and employability skills, social sensibility and responsibility**

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COURSE OUTCOMES:

COURSE CODE: CHE1SK-INORGANIC AND PHYSICAL CHEMISTRY.

CO Code	Upon the successful completion of the course, the student will be able to
CO1	Understand the properties of p-block elements, Preparations and structures of some important compounds of p-block elements, Realize the industrial importance and applications of some compounds of p-block elements such as silicones.
CO2	Understand the Properties of d-block elements with special emphasis on their characteristic properties
CO3	Distinguish among Solids, Liquids and gases in terms of intermolecular attractions and demonstrate the interdependence of properties of gases on one another. Understand the concept and applications of Joule-Thomson effect.
CO4	Enrich the basic concepts of solids and able to appreciate the application of diffraction phenomena to understand the internal structure of crystals besides knowing the various applications of defects in crystals
CO5	Understand the fundamental concepts of solutions, Azeotropic mixtures, Critical solution temperature, Nernst Distribution law and its applications
CO6	Have a broad insight into colligative properties, their experimental determination and their application to understand the fate of solute in the solvent.
CO7	Familiarize with the basic concepts associated with qualitative analysis of inorganic mixtures
CO8	Improve the skill of Using Laboratory equipment and chemicals
CO9	Apply the concepts of common ion effect, solubility product and concepts related to qualitative analysis

COURSE CODE: CHE2SK – INORGANIC, ORGANIC PHYSICAL AND GENERAL CHEMISTRY	
CO Code	**Upon the successful completion of the course, the student will be able to**
CO1	. Learn about various elements in the periodic table that are present in the body, and particularly various metals that are used and manufactured in daily life.
CO2	. Understand the formation of bonds and interactions between the atom's molecules, ions crystals and other stable substances that are used in attaining the best knowledge about feature projects like quantum mechanics.
CO3	. Gain the knowledge about various synthetic techniques and synthesized products that help a lot while working in manufacturing companies.
CO4	. Learn about various techniques for the conversion of different states of a substance (Liquefaction of gases, condensation, distillation etc.,) that are used in daily life.
CO5	. Stereochemistry is useful in understanding the spatial arrangement of atoms that determine the structure of a compound which is fundamental study all the concepts of organic chemistry.
CO6	. Identify a type of reaction involving in the formation of a product. The practical knowledge is very essential for the identification of ions and elements.
CO7	Understand the fundamentals of volumetric analysis

COURSE CODE: CHE3SK ORGANIC CHEMISTRY AND SPECTROSCOPY	
CO Code	**Upon the successful completion of the course, the student will be able to**
CO1	Understand the methods of preparation, properties and reactions of halo alkanes, halo arenes and oxygen containing functional groups
CO2	Apply the concepts of synthetic chemistry to transform one functional group into another
CO3	Learn the mechanisms of various important named reactions and their applications
CO4	Propose the plausible reaction mechanisms
CO5	Understand the basic concepts and under lying principles of Spectroscopy
CO6	Draw important conclusions with regard to structure of molecule from the data of various types of spectra
CO7	Acquire hard skills such as calculating limiting reagent, theoretical yield, percent yield
CO8	How to engage in safe laboratory practices by handling laboratory glassware, equipment and chemical reagents appropriately
CO9	Learn how to perform common laboratory techniques including reflux, distillation, recrystallization, vacuum filtration
CO10	How to create and carry out work up and separation processes
CO11	How to critically evaluate data collected to determine the identity, purity and percent yield of products and summarize findings in clear and concise manner

COURSE CODE: CHE4SKA-

INORGANIC, ORGANIC ANDPHYSICALCHEMISTRY COURSE OUT COMES

CO Code	Upon the successful completion of the course, the student will be able to
CO1	Learn the basic concepts of Organo metallic compounds specifically of metal carbonyls-P-acceptor behavior of Carbon monoxide-synergic effects
CO2	Have a Comprehensive idea on the definition, classification, biological importance of carbohydrates. Demonstrate the interconversions of monosaccharides basing the principles of Functional group interconversion
CO3	Acquire the in-depth knowledge of Amino acids and proteins
CO4	Classify heterocyclic compounds into different types and understand their importance in biological science
CO5	Understand the preparation, properties and important reactions of nitro compounds, amines, diazonium salts and their usage in the manufacturing of dyes
CO6	Distinguish between photochemical reaction and thermochemical reaction, understand the laws of photochemistry, quantum yield and its significance. Demonstrate the phenomena such as fluorescence and phosphorescence with the help of Jablonski diagram
CO7	Understand the basic definitions and laws of Thermodynamics and recognize and appreciate its interred relevance in bridging the fundamental laws of physics to know the spontaneity of a process
CO8	Understand the application of concepts learnt in theory during the practical sessions
CO9	Display the skill of determining melting and boiling points of organic compounds
CO10	Identify different functional groups in an organic compound by adopting systematic procedure

COURSE CODE: CHE4SKB-INORGANIC AND PHYSICALCHEMISTRY	
CO Code	**Upon the successful completion of the course, the student will be able to**
CO1	Understand broadly the various theories of coordinate complexes. Apply the concept of isomerism to complexes. Draw various three-dimensional isomersofcomplexes
CO2	Differentiate between strong and weak field complexes
CO3	Distinguish between SN^1 and SN^2 reaction mechanisms
CO4	Understand the stability measures of complexes and the factors that affect stabilities
CO5	Imbibe the importance of some elements in bio systems and appreciate the functions of hemoglobin and chlorophyll
CO6	Understand the concept of phase rule, draw the phase diagrams of one and two component systems and analyze the phase diagrams to arrive to the conditions of existence of a particular phase.
CO7	Enrich basics of electrochemistry, applications of conductivity measurements in conductometric titrations. learn about electro chemical cells construction and their application in potentiometric titrations. Conceive the concept of fuel-cells and their application as good prospect of alternative source of energy
CO8	Understand the concept of reaction rates and factors affecting it. Assimilate various theories of reaction rates.
CO9	Familiarize with the electroanalytical techniques.

COURSECODE: CHE5SK6C-INDUSTRIAL CHEMISTRY-1	
CO Code	**Upon the successful completion of the course, the student will be able to**
CO1	Identify the Importance of different surface coatings
CO2	Acquire a critical knowledge on manufacture of ceramics and cement
CO3	Understand the various steps in the manufacture of cane sugar
CO4	Explain the manufacture of pulp and paper

COURSE CODE: CHE5SK7C-INDUSTRIAL CHEMISTRY-2	
CO Code	**Upon the successful completion of the course, the student will be able to**
CO1	Identify the importance of industrial waste management
CO2	Acquire a critical knowledge on the preparation and applications of organic polymers
CO3	Demonstrate the analysis of water quality parameters
CO4	Explain the sources of Air pollution