Sai College®

COURSE OUTCOME S

OF

BACHELOR OF SCIENCE

VISION

Our vision is to produce competent Biotechnologists who can employ premium processes and applications which will profoundly influence existing paradigm of agriculture, industry, healthcare and restoration of environment providing sustainable competitive edge to present society.

MISSION

- To provide Biotechnology educational Program with impetus to generate quality workforce.
- To create awareness about potentials of Biotechnology with socio-ethical implications.
- To instill spirit of innovation and creativity in young minds with sound research aptitude.
- To nurture confident individuals who are effective contributors towards growth of the nation.

SAI COLLEGE

Program - B.Sc. (CHEMISTRY)

PROGRAM OUTCOMES

PO-1. Understand the basic concepts of science and able to correlate them with their daily life.

PO-2. Develop skill of handling instruments, performing experiments and logical analysis of the experimental results.

PO-3. Analyse the every situation of day to day life with scientific approach and able to draw objective conclusion for the betterment of society and humanity.

PO-4: To educate students on topics: Periodic Classification of Elements and Chemical Bonding

PO-5: To educate students on basic organic chemistry of saturated and unsaturated hydrocarbons along with introduction to different types of reactions.

PO-6: To expose students on radical analysis in inorganic mixtures; determination of surface tension and viscosity of liquids.

PO-7: To make students aware about 's', 'p' and Zero Group elements and their related chemistry

PO-8: To educate students on the topics: chemical kinetics, photochemistry and macromolecules.

PO-9: To provide laboratory experience to the students by performing volumetric analysis for determination of equivalent weight of acids and experiments based on organic compounds synthesis and their purification methods.

PO-10: To provide opportunity and experience of presenting seminar on pre-allotted topics related to theory.

B.Sc. (Chemistry)

Paper	Name of Paper
Paper I	Inorganic Chemistry
Paper II	Organic Chemistry
Paper III	Physical Chemistry

Course Outcomes

Paper	Paper Name (Paper code)	Outcomes After completion of the course the student should be able to
B.Sc. I		
Paper I	Inorganic Chemistry	CO –1 To get the knowledge of the structure of atom and periodicity in the properties of elements CO – 2. To get the knowledge of the process of formation of ionic bond and properties of ionic solids CO – 3To get the knowledge of the theories of covalent bond formation

		CO – 4. Know the salient features of s and p block elements CO – 5. To get the knowledge of the chemistry of noble gases and theoretical principles involved in qualitative analysis
Paper II	Organic Chemistry	CO – 1. To get the knowledge of the basic concepts and electronic effects of organic chemistry. CO – 2. Know the stereochemistry of organic molecules CO – 3. To get the knowledge of the conformational analysis of alkanes CO – 4. Understand the chemistry of alkane, alkene and alkyne CO – 5. Know the concept of aromaticity and electrophilic substitution reaction in aromatic compounds
Paper III	Physical Chemistry	CO – 1. To get the knowledge of the basic mathematical concept used in chemistry CO – 2. Understand the kinetic molecular model of gas and understand the behaviour of real gases CO – 3. To get the Knowledge of the intermolecular forces and understand colloid and surface chemistry CO – 4. Understand the symmetry, crystal system and crystal defects CO – 5. Know the rate of reaction, factors affecting it and theories of reaction rate and catalysis.
Lab course	Inorganic chemistry	CO – 1. To get knowledge of the inorganic mixtures by the Semi-micro qualitative analysis CO – 2. Understand the strength of unknown solution by volumetric method CO – 3. Get the knowledge of elements (N, S and halogens) and functional groups in organic

		compounds CO – 4. Understand the measurement and composition of a binary liquid mixture by surface tension method CO – 5 To know the composition of a binary liquid mixture by viscometer
B.Sc. II		
Paper I	Inorganic Chemistry	CO – 1. To get the knowledge of chemistry of transition series elements CO – 2. To get the knowledge of the redox potential data & its application and chemistry of coordination compounds CO – 3. Understand the valance bond theory and crystal field theory CO – 4. To know the chemistry of lanthanides and actinides CO – 5. Understand the theories of acid and bases and physical properties & chemical reactions of non-aqueous solvents
Paper II	Organic Chemistry	CO – 1. To get the knowledge of the mechanism of nucleophilic substitution and elimination reactions CO – 2. Understand the preparation, properties and reactivity of alcohol and phenol CO – 3. To Know the nomenclature, structure and reactivity of carbonyl group CO – 4. To get the knowledge of chemistry of carboxylic acid and its derivatives CO – 5. To get the knowledge of the reactivity, structure and properties of organic compounds of nitrogen
Paper III	Physical Chemistry	CO – 1. To know the laws of thermodynamics and know the meaning of various thermodynamic terms

		CO – 2. To get knowledge of the concept of entropy and free energy CO–3.Understand the chemical & ionic equilibrium and equilibrium constant CO – 4. To get the knowledge of the phase rule and its application to one, two and three component system CO–5. Get the knowledge of characteristics of electromagnetic radiation, laws of photochemistry and quantum yield
Lab course	Chemistry Practical	CO – 1. Understand the semimicro analysis of mixtures containing interfering radicals. CO – 2. Determine the strength of solution by volumetric method CO – 3. To get the knowledge of specific organic compound CO – 4. Understand the R_f value and identify organic compound through paper chromatography CO – 5. To get the knowledge the enthalpy of chemical reactions
B.Sc. III		
Paper I	Inorganic Chemistry	CO – 1. Know the metal-ligand bonding in transition metal complexes CO – 2. To get the knowledge of magnetic properties of transition metal complexes CO – 3. To Know the classification, properites, bonding and applications of organometallic compounds CO – 4. Understand the essential and trace elements in biological processes CO – 5. To get the knowledge of cocept of hard and soft acid and base and inorganic polymers
Paper II	Organic Chemistry	CO – 1. Understand the heterocyclic organic compounds

		CO – 2. To get the knowledge of organomellic compounds CO- 3 To get the knowledge of understand the knowledge CO – 4 Understand the chemistry of synthetic polymers and dyes CO – 5. Understand the principle and applications of NMR, IR and UV – Visible spectra
Paper III	Physical Chemistry	CO – 1. To get the knowledge of basic concept of quantum mechanics along with Schrodinger's equation & its applications CO – 2. Know the quantum mechanical approach of molecular orbit theory CO – 3. Get the knowledge of principle and applications of Microwave, Infrared and Raman spectra CO – 4. Understand the concept electrochemistry for electrolytes CO – 5.Understand the diffirent types of electronic cell and there potential
Lab course		CO – 1. Synthesis of inorganic complexes CO – 2. Gravimetric estimation of element CO – 3. Synthesis of Organic Compounds CO – 4. Analysis of an organic mixture containing two solid components CO – 5. Determine the strength of acid or base by conductometric titration