

Programme Outcomes and Course Outcomes

Bachelor of Science (B.Sc.)



Namita Education & Welfare Society's

SIDDHARTH COLLEGE

(B.M.M., B.M.S & B.Com)

(A Minority Institute, Affiliated to University of Mumbai)

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Department of Chemistry

Course Outcome

USCH101	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none">• Compute Concentration in various forms.• Summarizes atomic structure evolution.• Explain Periodic Properties.• Elaborate IUPAC rules of naming of organic compounds.• Discuss reaction mechanism.
USCH102	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none">• Predict properties of liquids.• Count the rate of reaction.• Explain the properties of main group elements.• State environmental properties of Oxides and Oxyacids of N & S.• Convert molecule in different projection formulae.• Infer reasons optical of activity.
USCH201	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none">• Discuss the laws of gases.• Determine Equilibrium and thermodynamic parameters.• Explain concepts of qualitative analysis.• Outline Acid Base Theories.• Illustrate Carbon-Carbon sigma and pi bonding.• Explain reactions of alkene and alkynes.
USCH202	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none">• Estimate pH of buffer solutions.• Relate interaction between matter with electromagnetic radiation.• Outline chemical bonding and reactivity.• Describe redox chemistry.• Design three dimensional models of molecules.• Summarizes chemistry of aromatic compounds.
USCHP1	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none">• Estimate strength of commercial acid.• Examine percentage composition of mixtures.• Design double indicator titration.• Infer purification technique.• Apply chromatographic technique.• Operate qualitative identification technique of organic compounds.
USCH301	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none">• Discuss partial molar properties.• Summarizes conductivity and resistivity.• Outline non directional and directional bonding.• Apply molecular orbital theory.• Illustrate reactivity of halogenated hydrocarbon.• Differentiate between alcohols phenol and epoxides.

USCH302	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Predict theories of reaction kinetics. • Discuss Nernst distribution law. • Understand chemistry of p block elements. • Classify silicon and germanium w.r.t. their reactivity. • Generalize nucleophilic addition reaction mechanism. • Examine reactivity of active methylene compounds.
USCH303	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Discuss the role of analytical chemistry in various fields. • Apply method of sampling and statistical treatment of data. • Demonstrate classical methods of analysis. • Identify suitable gravimetric or volumetric method. • Summarizes various instrumental methods of analysis. • Appreciate basic terms in spectroscopy.
USCH401	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Distinguish between reversible and irreversible cell. • Understand phase equilibria. • Compare transition metal chemistry. • Evaluate qualitative tests for transition metal ions. • Outline properties of coordination compounds. • Explain reactivity of carboxylic and sulphonic acids.
USCH402	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Appreciate terms in crystallography. • Explain the concepts of catalysis. • Design the behaviour of ions in aqueous medium. • Demonstrate uses of environmental chemistry. • Show the chemistry of nitrogen containing heterocycles. • Prepare and use of diazonium salts.
USCH403	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Outline the types of separation methods. • Apply solvent extraction technique. • Utilise statistical method of data analysis. • Appreciate nature need and importance of pH. • Computation of confidence limit and confidence interval. • Utilize conductometric titration.
USCHP2	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Judge the Ostwald's dilution law. • Estimate hardness of water. • Prepare organic compounds. • Use of pH to locate the end point of acid base titration. • Analyse inorganic salts qualitatively by semi micro method. • Operate conductometer and potentiometer.
USCH501	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Discuss colligative properties of dilute solutions. • Apply phase rule to two component system. • Analyse types of adsorption isotherm. • Explain Catalyst poisoning and deactivation.

	<ul style="list-style-type: none"> • Develop Concentration Cell. • Utilise EMF measurement. • Distinguish types of polymers. • Summarise laws of crystallography.
USCH502	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Explain concept of Point groups. • Apply molecular orbital theory. • Discuss structures of solids. • Calculate limiting radius coordination no 4. • Illustrate lanthanide series. • Rewrite actinide chemistry. • Elaborate chemistry of non-aqueous solvents. • Classify solvents.
USCH503	<p>Upon completion of this course the students will be able to:</p> <ul style="list-style-type: none"> • Generalize the reaction mechanism. • Rewrite name reaction. • Predict Molecular Chirality. • Apply stereochemistry to addition reactions.

Department of Physics

Course Outcome

Classical Physics (USPH101)	<p>On successful completion of this course students will be able to:</p> <ul style="list-style-type: none"> • Understand Newton's law and apply them in calculations of the motion of simple systems. • Use of free body diagram to analyze the forces on the object. • Understand the concept of friction and the concept of elasticity, fluid mechanics and be able to perform calculations using them. • Understand the concepts of lens system and interface. • Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process. • Demonstrate quantitative problem solving skills in all the topics covered.
Modern Physics (USPH102)	<p>After successful completion of this course students will be able to:</p> <ul style="list-style-type: none"> • Understand nuclear properties and nuclear behavior. • Understand the type isotopes and their applications. • Demonstrate and understand the quantum mechanical concepts. • Demonstrate quantitative problem solving skills in all the topics covered.
Mathematical Physics (USPH201)	<p>On successful completion of this course students will be able to:</p> <ul style="list-style-type: none"> • Understand the basic mathematical concepts and applications of them in physical situations. • Demonstrate quantitative problem solving skills in all the topics covered.

Electricity and Electronics (USPH202)	<p>On successful completion of this course students will be able to:</p> <ul style="list-style-type: none"> • Understand the basic AC circuits and AC bridges. • Understand the Circuit theorems & digital electronics circuits. • Understand the electrostatics and magnetostatics concepts and laws.
Practical I (USPHP1)	<p>On successful completion of this course students will be able to:</p> <ul style="list-style-type: none"> • To demonstrate their practical skills. • To understand and practice the skills while doing physics practical. • To understand the use of apparatus and their use without fear. • To correlate their physics theory concepts through practical. • Understand the concepts of errors and their estimation.
Practical II (USPHP2)	<p>On successful completion of this course students will be able to:</p> <ul style="list-style-type: none"> • To understand and practice the skills while doing physics practical. • To understand the use of apparatus and their use without fear. • To correlate their physics theory concepts through practical. • Understand the concepts of errors and their estimation.

Department of Botany

Course Outcome

Plant Diversity (USBO101)	<p>After completion of the course students will able to:-</p> <ul style="list-style-type: none"> • Observe and study General characteristics of Chlorophyta. • Impart knowledge of Structure, life cycle and systematic position of Nostoc and Spirogyra. • Enumerate economic importance of Algae. • Study General Characteristics of Phycomycetes. • Impart knowledge of Structure, life cycle and systematic position of Rhizopus and Aspergillus. • Enumerate economic importance of Fungi. • Study mode of nutrition in Fungi. • Describe General characteristics of Hepateceae. • Have knowledge of Structure, life cycle and systematic position of Riccia.
Form and Function (USBO102)	<p>After completion of the course students will able to:-</p> <ul style="list-style-type: none"> • Characterize general structure of cell wall and plasma membrane of plant cell. • Study of ultra-structure of and functions of Endoplasmic reticulum and Chloroplast. • Get clarify about energy pyramids and flow of energy in an ecosystem. • Acquire knowledge of Types of Ecosystems. • Specify and Explain words phenotype and genotype. • Study of Mendelian Genetics. • Elaborate test cross and back cross. • Explain mechanism of Epistatic and non-epistatic gene interactions. • Clarify Multiple alleles with suitable examples.

<p>Plant Diversity (USBO201)</p>	<p>After completion of the course students will able to:-</p> <ul style="list-style-type: none"> • Make clear about structure, lifecycle, systematic position and alternation of generation of in Nephrolepis. • Throw light upon stellar evolution. • Describe structure, lifecycle, systematic position and alternation of generation of in Cycas. • Enumerate economic importance of Gymnosperms. • Have detail knowledge of leaf. • Analyze and distinguish detail study of inflorescence. • Compare and study plant families: Malvaceae and Amaryllidaceae.
<p>Form and Function (USBO202)</p>	<p>After completion of the course students will able to:-</p> <ul style="list-style-type: none"> • Observe and compare simple and complex plant tissues. • Get clarify about Primary structure of Dicot and Monocot root stem and leaf. • Inculcate knowledge of epidermal tissue system of plants. • Understand photosynthesis in detail. • Learn the concept of primary and secondary metabolites. • Relate grandma's pouch with respect to plant source, part used, active constituent and medicinal uses of certain plants.



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