Shri Shivaji Education Society, Amravati's

Shri Pundlik Maharaj Mahavidyalaya, Nandura

Reaccredited by NAAC with 'C' grade

ISO 9001:2015

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COs, POs and PSOs

Faculty of Science

Program Name	Year	Sem	Course Name	Course Outcome (Cos) At the end of course, students are able to…	Program Specific Outcome (PSOs)	Program Outcome (POs) At the end of program, students are able to…
B. Sc.	1st	I	English	1. Understand nature and nuances of English Language used in prose lessons and poetic passages. 2. Apply the knowledge of English to communicate with others on personal, social, literary and interdisciplinary topics. 3. Compare the structure of English language to use LSRW. 4. Formulate the sentences as per situational requirement. 5. Differentiate between acceptable and unacceptable sentences in English. 2 6. Create appropriate, grammatically correct and acceptable sentences in English. 7. Develop general language proficiency through listening, speaking, reading and	1. To develop the effective communication skill in listening, reading, writing speaking as a speaker. 2. To inculcate the thought of great thinkers and social reformers. 3. To inculcate the human values and sense of responsibility towards nation development.	1.Comprehend various forms of literature like Prose, Poetry, Drama and Fiction 2.Develop the knowledge of grammatical system 3. Develop four language skills LSRW 4. Widen scope of employability and Entrepreneurship viz Teaching,

				writing.		Civil Services and Creative Writing
	1st	I	Botany	1. understand microbial diversity, reproduction and economic importance. 2. differentiate the microbes, algae and fungi on the basis of morphology, cellular organization, nutrition and metabolic activities. 3. classify and identify the various algal genera. 4. classify and identify the various fungal genera. 5. Systematize the plant diseases and their pathogens 6. Apply understanding of microbial diversity, phycology and mycology for teaching primary to high school students		
	1st	I	Chemistry	1. Solve the conceptual questions using the knowledge gained by studying periodicity in atomic radii, ionic radii, ionization energy and electron affinity of elements. 2. Apply concepts of acids and bases as well as non-aqueous solvents and their industrial usage. 3. Compare different reaction intermediates, functional group chemistry through the study of methods of preparation, properties and chemical reactions with underlying mechanism. 4. Choose correct synthetic approach to prepare derivatives of industrially important molecules 5. Solve different numerical problem of varying difficulty associated with gaseous and liquid state. 6. Apply the concepts from advanced mathematics to solve the derivation of different chemical formulae.		
	1st	I	Zoology	1. Develop a deeper sense with respect to		

				phylum Protozoa to Echinodermata relation to taxonomy, classification, body organization and general characteristics this strengthens students' capability in basic zoology. 2. grasp various the Systematic positions from Protozoa to Echinodermata their pathogenicity and its epidemiology. 3. describe unique characters and recognize life functions of Protozoa, Porifera, Coelenterate, Helminthes, Arthropoda, Annelida, Mollusca and Echinodermata. 4. Improve ability and apply Knowledge of Non-chordates for its execution in Agriculture especially with the phylum Arthropoda. 5. Implement an extensive idea about economic and ecological significance of various non-chordates phylum's in human life.		
	1st	I	Physics	1. Discuss the basic concepts of rotational dynamics. 2. Examine the phenomenon of simple harmonic motion and distinction between undamped, damped and force oscillations and the concept of resonance. 3. Explain the superposition of simple harmonic motion and acquire the knowledge of Ultrasonic waves, their production, detection and applications in different field. 4. Determine the constants of elasticity and relate it with appropriate things 5. Interpret the postulates of special theory of relativity. 6. Know the concept of Global positioning system (GPS)		
	1st	I	Computer	1. Understand the computer, I/O and		

			Science	peripheral devices. 2. Understand concept of Operating systems. 3. Apply the Programming concepts. 4. Learn C language. 5. Write Simple C Programs.		
	1st	II	English	CO1 Understand the paragraph, prose, poetry CO2. Apply the four skills of language in his daily routine. CO3. Formulate/ compose his own sentences and able to speak English Language. CO4. Collaborate with others students in English. CO5. Communicate properly their ideas and concepts in English.		
	1st	II	Botany	1. understand microbial diversity, reproduction and economic importance. 2. differentiate the microbes, algae and fungi on the basis of morphology, cellular organization, nutrition and metabolic activities. 3. classify and identify the various algal genera. 4. classify and identify the various fungal genera. 5. Systematize the plant diseases and their pathogens 6. Apply understanding of microbial diversity, phycology and mycology for teaching primary to high school students		
	1st	II	Chemistry	1. Analyse the given organic compound qualitatively by different tests. 2. Prepare the derivative of the provided substance. 3. Illustrate the practical skills in volumetric analysis. 4. Differentiate types of titrations e.g. acid-base, redox, etc. 5. Comprehend the kinetics of reactions and interpret the experimental data. 6. Calculate, communicate and analyse the result.		

	1st	II	Zoology	1. know what the chordates are. 2. Learn about the different phylum of chordates. 3. confidently explain the general characters and classification of Protochordates upto class Mammalia. 4. understand the level of organization in chordate. 5. explain the origin and evolutionary relationship in different subphylums of chordates. 6. describe specific features of Protochordates upto class Mammalia. 7. recognize and differentiate life functions of Protochordates upto class Mammalia. 8. understand Migration in fishes and birds , parental care in Amphibians and Poisonous and non-poisonous snakes. 9. explain the adaptations in Birds and Mammals.		
	1st	II	Physics	1. Discuss the concept of scalars & vectors and their properties. 8. Develop an understanding of Gauss law and its applications to obtain electric filed in different cases. 9. Formulate the relationship between electric displacement vector, electric polarization and dielectric constant. 10. Distinguish between the magnetic effect of electric current, electromagnetic induction and the related laws in appropriate circumstances. 11. Simplify electrical circuits by applying various network theorems		
	1st	II	Computer Science	1. Implement basic data structures such as arrays, stacks. 2. use linked list, trees and queues. 3. Apply Algorithm for solving problems like sorting, searching, insertion		

				and deletion of data. 4. Describe the procedural and object-oriented paradigm with concepts of streams, classes, functions, data and objects. 5. Perform programming on functions, inline functions, constructor and destructor. 6. Perform programming on the concept of function overloading, operator overloading, virtual functions and polymorphism.		
	2nd	III	Botany	1. To get introduce the concept and importance of biodiversity. 2. To identify and compare the system of classification. 3. To describe and illustrate systematic studies and economic importance of angiosperms family. 4. To acquire the knowledge of plant cell, tissues and their functions. 5. To identify and compare the structural difference between monocots and dicots. 6. To know the structure and development of monocots		
	2nd	III	Chemistry	1. To understand the concept covalent bonding, metallic bonding and VSEPR theory. 2. To acquire the knowledge of quantitative inorganic analysis like the volumetric and gravimetric analysis. 3. To acquire the knowledge of aldehydes, ketones and carboxylic acids. 4. To learn the concept of isomerism including optical, geometrical and Conformational isomerism.		

				5. To acquire the knowledge		
	2nd	III	Zoology	1. To understand the basic concepts about chordates. 2. To learn the various systems like digestive systems, respiratory system and reproductive systems. 3. To analyze the systemic position and external morphology of Calotese versicolar. 4. To classify various classes of phylum chordate i.e. Pisces, reptiles, aves and mammals. 5. To awareness for palaeontology i. e. fossils and its significance. 6. To learn the process of evolution.		
	2nd	III	Physics	1. To solve the mathematical methods Physicists often used including differential calculus, operators and integral calculus. 2. To learn Maxwell equations and wave equations satisfied by electric and magnetic field. 3. To understand the electrical conductivity in semiconductor materials and its electrical behavior. 4. To acquire the		

				knowledge of semiconductor device which is act as a back - bone of electronic device. 5. To understand the concept any motion of an object can achieve the speed of light then possible event such as length is relative, time is relative, mass is relative. 6. To learn basic fundamental of atmosphere and its natural phenomenon and event.		
	2nd	III	Computer Science	1. To understand the various the data structure and design. 2. To apply the knowledge of introduction to queues and linked list. 3. To apply the knowledge of basics trees, sorting and searching interact with data structure. 4. To understand the aspects of object oriented programming in C++ 5. To illustrate the concept of various functions in C++. 6. To apply the knowledge of operator overloading and Inheritance in C++.		

	2nd	IV	Botany	1. To explain the structure of cell components. 2. To describe the structure and functions of cell organelles. 3. To acquire the knowledge of chromosomes. 4. To describe the interaction of gene. 5. To illustrate linkage, crossing over and gene mutations. 6. To explain the theory for mechanism of action of enzymes.		
	2nd	IV	Chemistry	1. To understand the chemistry elements in transition series and extraction of elements. 2. To acquire the knowledge of inner transition elements and a general principle of metallurgy. 3. To learn the knowledge of polynuclear hydrocarbons, reactive methylene compounds and carbohydrates. 4. To acquire the knowledge of aromatic nitro compounds, amino compounds, diazonium salts, amino acid and		

				protein. 5. To analyze the colligative properties of dilute solutions. 6. To learn the conceptof crystalline state.		
	2nd	IV	Zoology	1. To understand the chemistry elements in transition series and extraction of elements. 2. To acquire the knowledge of inner transition elements and a general principle of metallurgy. 3. To learn the knowledge of polynuclear hydrocarbons, reactive methylene compounds and carbohydrates. 4. To acquire the knowledge of aromatic nitro compounds, amino compounds, diazonium salts, amino acid and protein. 5. To analyze the colligative properties of dilute solutions. 6. To learn the conceptof crystalline state.		
	2nd	IV	Physics	1. To understand the basic fundamental of optics and superposition of two		

				waves. 2. To learn the concept of bending of light. 3. To understand the vertical constraint on electromagnetic wave of radiation. 4. To acquire the information of single color wavelength monochromatic wave of Light. 5. To learn the communication through fiber optics. 6. To the understand the freely available source of energy.		
	2nd	IV	Computer Science	1. To understand the fundamental of DBMS. 2. To apply the knowledge of introduction to relational model. 3. To apply the knowledge of basics introduction to SQL. 4. To understand the basics of various functions. 5. To illustrate the concept of PL/SQL, Cursor & Triggers. 6. To apply the knowledge of transaction & securities of database.		

	3rd	V	Botany	1. To understand the plants and plants cell in relations to water. 2. To acquire the knowledge about process of photosynthesis and respiration in higher plants. 3. To learn about the nitrogen metabolism. 4. To understand the plant movement. 5. To understand the concept of ecology and environment. 6. To acquire plant communities and ecological adaptation of plant.		
	3rd	V	Chemistry	1. To understand the concept of co-ordination compounds, applications of chelates in analytical chemistry. 2. To acquire the knowledgeof crystal field theory, electronic spectra of transition metal complexes. 3. To learn the importance of heterocyclic compounds and organometallic compounds.		

				4. To acquire the knowledge of synthesis and application of dyes, drugs, pesticides. 5. To understand the concept of photochemistry, chemiluminescence and bioluminescence. 6. To learn the concept of molecular spectroscopy and importance of the Raman effect.		
	3rd	V	Zoology	1. To familiarize the students with physiological activities (respiratory, circulatory, problems and remedial. 2. To understand the structure, composition and functions of muscles. 3. To acquire broad anddeep understanding of nerve physiology and chemical co-ordination in our body. 4. To develop deeper knowledge of homeostasis and conservative regulation as well as reproductive physiology. 5. To examine beneficial		

				insects, harmful insects and ist economic importance in agricultural zoology. 6. To describe freshwater, marine fisheries, monoculture, polyculture, techniques in induced breeding as well as scope, importance and present status of aquaculture in India.		
	3rd	V	Physics	1. To understand the basic fundamental of optics and superposition of two waves 2. To learn the concept of bending of light. 3. To understand the vertical constraint on electromagnetic wave of radiation. 4. To acquire theinformation of single color wavelength monochromatic wave of Light. 5. To learn the communication through fiber optics. 6. To the understand the freely available source of energy.		
	3rd	V	Computer	1. To understand the various		

			Science	.Net framework. 2. To apply the concept of even driven programming. 3. To apply the knowledge of basics decisions and loops refers to decision making standard and executethe series of statements. 4. To understand the aspects of java programming fundamental 5. To illustrate the concept of classes and inheritances in Java programming. 6. To apply the knowledge of Java is a true object oriented language.		
	3rd	VI	Botany	1. To understand the biochemical of nucleic acid their role in living system, experimental evidence to prove DNA as genetic material. 2. To know the concept of gene structure and expression. 3. To acquire knowledge about the regulation of gene expiration. 4. To develop knowledge		

				about tolls and techniques of recombinant DNA, cloning vector and gene library. 5. To understand the basic aspects of plant tissue culture technique. 6. To acquire the knowledge of application of biotechnology in agriculture, industry and conservations.		
	3rd	VI	Chemistry	1. To understand the concept of kinetic aspects of metal complexes, industrial application of spectrophotometry, calorimetry, paper chromatography, Paper chromatography. 2. To acquire the knowledge of organometallic chemistry, application of inorganic polymers, the biological role of essential and trace elements in biological processes. 3. To apply the concept of electronic spectroscopy, IR spectroscopy to various organic structures. 4. To apply the concept of		

				NMR, Mass spectroscopy to various organic structures. 5. To acquire the knowledge of elementary quantum mechanics, application of schrodinger wave equation to a particle. 6. To learn the concept of electrochemistry, Nuclear chemistry, application of radioisotopes in industry, agriculture, medicines, bio-sciences.		
	3rd	VI	Zoology	1. To provide intensive and in-depth knowledge of basic unit of life at molecular level i. e. DNA, RNA, and it's types and functions. 2. To demonstrate the process/ mechanism of DNA replication, concept of genes and it's brief study. 3. To analyze the process of transcription, translation and gene regulation. 4. To understand the concept of mutation, different/various types of mutations and it's significance.		

				5. To introduce the new developments and techniques in molecular biology and it's implications in human welfare. 6. To distinguish innate immunity and acquired immunity, it's importance and to acquire the knowledge of ELIZA technique.		
	3rd	VI	Physics	1. To understand microstates and macro states of matter and to get the idea about Maxwell Boltzmann statics. 2. To familiar about statically distribution and have a basic ideas about Bose Einstein and Fermi Dirac distribution and their application. 3. To understand the crystal structure and clear understanding about Xray diffraction and defects in crystal. 4. To understand the Electrical properties of material and band structure 5. To study the Magnetic		

				properties of material. 6. To acquire the knowledge of superconductivity and nanotechnology and its application in modern world.		
	3rd	VI	Computer Science	1. To understand the exception handling and multithreading. 2. To apply the concept of applet in advanced java. 3. To apply the knowledge of event handling and AWT. 4. To understand the aspects of windows applications: forms. 5. To illustrate the concept of object oriented programming: classes and objects. 6. To apply the knowledge of data access with ADO.net.		