



D.A.V PUBLIC SCHOOL
SECTOR -III, DHURWA RANCHI-04
AFFILIATED TO C.B.S.E (10+2) NEW DELHI
CLASS- 11 SCIENCE
SYLLABUS



PHYSICS

Sl No.	Month	Chapter/ unit	Topics
1	June	Chapter-2: Units and Measurements	Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. significant figures. Dimensions of physical quantities, dimensional analysis and its applications.
		Chapter-3: Motion in a Straight Line	Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, uniform and non-uniform motion, and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment).
		Chapter-4: Motion in a Plane	Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration- projectile motion, uniform circular motion.

2	July	Chapter-5: Laws of Motion	<p>Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.</p> <p>Law of conservation of linear momentum and its applications.</p> <p>Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication.</p> <p>Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).</p>
3	August	<p>Chapter-6: Work, Energy and Power</p> <p>Chapter-7: System of Particles and Rotational Motion</p>	<p>Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power.</p> <p>Notion of potential energy, potential energy of a spring, conservative forces: non-conservative forces, motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.</p> <p>Centre of mass of a two-particle system, momentum conservation and Centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod.</p> <p>Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications.</p> <p>Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions.</p> <p>Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).</p>

4	September	Chapter-8: Gravitation	Kepler's laws of planetary motion, universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape speed,orbital velocity of a satellite.
		Chapter-9: Mechanical Properties of Solids	Elasticity, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity (qualitative idea only), Poisson's ratio; elastic energy.
		Chapter-10: Mechanical Properties of Fluids	Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow

		Chapter-11: Thermal Properties of Matter	<p>Critical velocity, Bernoulli's theorem and its simple applications. Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise</p> <p>Chapter-11: Thermal Properties of Matter Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv -calorimetry; change of state - latent heat capacity. Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law .</p>
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6	November	Chapter-12: Thermodynamics Chapter-13: Kinetic Theory	Thermal equilibrium and definition of temperature, zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics, Second law of thermodynamics: gaseous state of matter, change of condition of gaseous state - isothermal, adiabatic, reversible, irreversible, and cyclic processes. Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.
7	December	Chapter-14: Oscillations	Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their applications. Simple harmonic motion (S.H.M) and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period.
8	January	Chapter-15: Waves	Chapter-15: Waves Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.
9	February		Revision
10	March		Annual Exam

Term I Syllabus Chapter 1-6

Term II Syllabus All chapters

CHEMISTRY

Sl No.	Month	Chapter/ unit	Topics
1	June	Unit I Some Basic Concepts of Chemistry	General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.
2	July	Unit II Structure of Atom	Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals.
3	August	Unit III Classification of Elements and Periodicity in Properties	Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements - atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.
4		Unit VIII Redox Reactions	Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

5	September	Unit XII Organic Chemistry: Some basic Principles and Techniques	General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.
6	October	Unit XIII Hydrocarbons	<p>Classification of Hydrocarbons</p> <p>Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes - Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes - Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water.</p> <p>Aromatic Hydrocarbons: Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in monosubstituted benzene. Carcinogenicity and toxicity.</p>

7	November	Unit IV Chemical Bonding and Molecular Structure	Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules(qualitative idea only), Hydrogen bond.
8	December	Unit VI Chemical Thermodynamics	Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics -internal energy and enthalpy, heat capacity and specific heat, measurement of U and H, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and nonspontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction).
9	January	Unit VII Equilibrium	Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples).

Term I syllabus:- Unit I, Unit II, Unit III, Unit VIII .

Term II syllabus:- full syllabus.

BIOLOGY

Sl No.	Month	Unit	Chapter	Topics
1	June	Unit I Diversity of Living Organisms	Chapter-1 The Living World	Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature
2			Chapter-2 Biological Classification	Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.
3			Chapter-3 Plant Kingdom	Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations)
4	July		Chapter-4 Animal Kingdom	Salient features and classification of animals, non-chordates up to phyla level and chordates upto class level (salient features and at a few examples of each category). (No live animals or specimen should be displayed.)
5		Unit II Structural Organization in Plants and Animals	Chapter-5 Morphology of Flowering Plants	Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae
6	Chapter-6 Anatomy of Flowering Plants		Anatomy and functions of tissue systems in dicots and monocots.	
7	August		Chapter-7 Structural Organisation in Animals	Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.

8	September	Unit-III Cell Structure and Function	Chapter-8 Cell-The Unit of Life	Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.
9			Chapter-9 Biomolecules	Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, and nucleic acids; Enzyme - types, properties, enzyme action. (Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents Concept of Metabolism, Metabolic Basis of Living, The Living State)
10			Chapter-10 Cell Cycle and Cell Division	Cell cycle, mitosis, meiosis and their significance
11	October	Unit-IV Plant Physiology	Chapter-13: Photosynthesis in Higher Plants	Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.
12			Chapter-14 Respiration in Plants	Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

13	November		Chapter-15 Plant - Growth and Development	Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; plant growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.
14	December	Unit-V Human Physiology	Chapter-17 Breathing and Exchange of Gases	Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders
15			Chapter-18 Body Fluids and Circulation	Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.
16			Chapter-19 Excretory Products and their Elimination	Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system – structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.

17	January		Chapter-20 Locomotion and Movement	Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and musclecontraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.
18			Chapter-21 Neural Control and Coordination	Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse
18	February		Chapter-22 Chemical Coordination and Integration	Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease. Note: Diseases related to all the human physiological systems to be taught in brief.

Term I syllabus :- chapter :- 1,2,3,4,5,6,7,8,9,10. (Revision in September)

Term II syllabus :- full syllabus (Revision in February & annual exam)

MATHS

Sl No.	Months	Unit	Chapter	Topics
1	June	Unit-I Sets and Functions	Chapter:- Sets	Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement
2	July		Chapter :-2 Relations & Functions	Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto $R \times R \times R$). Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions
3			Chapter:-3 Trigonometric Functions	Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity $\sin^2x + \cos^2x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing $\sin(x \pm y)$ and $\cos(x \pm y)$ in terms of $\sin x$, $\sin y$, $\cos x$ & $\cos y$ and their simple applications

4	August	Unit-II Algebra	Chapter :- 4 Complex Numbers and Quadratic Equations	Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane
5			Chapter :- 5 Linear Inequalities	Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.
6	September		Chapter:-6 Permutations and Combinations	Fundamental principle of counting. Factorial n. (n!) Permutations and combinations, derivation of Formulae for ${}^n P_r$ and ${}^n C_r$ and their connections, simple applications.
7	October		Chapter :-7 Binomial Theorem	Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.
8			Chapter :- 8 Sequence and Series	Sequence and Series. Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.
9	November	Unit-III: Coordinate Geometry	Chapter :- 9 Straight Lines	Brief recall of two dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form, Distance of a point from a line.
10		Chapter :- 10 Conic Sections	Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.	

11	December		Chapter :- 11 Introduction to Three- dimensional Geometry	Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.
12	January	Unit-IV: Calculus	Chapter :- 12 Limits and Derivatives	Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions
13		Unit-V Statistics and Probability	Chapter :- 13 Statistics	Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.
14	February		Chapter :- 14 Probability	Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.

Term I syllabus chapter:- 1,2,3,4,5,6,7 . (Revision in September)

Term II syllabus :- full syllabus (Revision in February)

ENGLISH

Sl. No.	Month	Chapter
2.	June	Hornbill:Ch1 'The Portrait of a Lady'
		Snapshots:Ch1 'The Summer of the Beautiful White Horse'
		Hornbill:Poem1 'A Photograph'
		Notice Writing
3.	July	Hornbill:Ch2 'We're Not Afraid to Die..... Together'
		Snapshots:Ch2 'The Address'
		Hornbill : Poem 2 'The Laburnum Top'
		Writing & Grammar: Tense & Clauses
4.	August	Hornbill:Ch-3 'Discovering Tut: The Saga Continues'
		Hornbill:Poem3 'The Voice Of The Rain'
		Snapshots: Ch5 'Mother's Day'
		Writing & Grammar: Classified Advertisements & Posters
5.	September	Revision for the Half Yearly Exam
6.	October	Hornbill : Ch 7 'The Adventure'
		Snapshots:Ch7 'Birth'
		Hornbill:Poem4 'Childhood'
7.	November	Hornbill:Ch8 'Silk Road'
		Snapshots:Ch8 'The Tale of Melon City'
		Hornbill:Poem5 'Father to Son'
8.	December	Note-Making, Debate & Speech
9.	January	Revision for the final Exam

PHYSICAL EDUCATION

Sl No.	Month	Chapter/ unit	Topics
1	April	Changing Trends and Careers in Physical Education	<ol style="list-style-type: none"> 1. Concept, Aims & Objectives of Physical Education 2. Development of Physical Education in India – Post Independence 3. Changing Trends in Sports- playing surface, wearable gear and sports equipment, technological advancements 4. Career options in Physical Education 5. Khelo-India Program and Fit – India Program
2	May	Olympism Value Education	<ol style="list-style-type: none"> 1. Olympism – Concept and Olympics Values (Excellence, Friendship & Respect) 2. Olympic Value Education – Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind 3. Ancient and Modern Olympics 4. Olympics - Symbols, Motto, Flag, Oath, and Anthem 5. Olympic Movement Structure - IOC, NOC, IFS, Other members
3	June	Yoga ,Physical Education and Sports for Children with Special Needs	<ol style="list-style-type: none"> 1. Meaning and importance of Yoga 2. Introduction to Astanga Yoga 3. Yogic Kriyas (Shat Karma) 4. Pranayama and its types. 5. Active Lifestyle and stress management through Yoga 1. Concept of Disability and Disorder 2. Types of Disability, its causes & nature (Intellectual disability, Physical disability). 3. Disability Etiquette 4. Aim and objectives of Adaptive Physical Education. 5. Role of various professionals for children with special needs (Counselor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist, and Special Educator)

4	July	Psychology and Sports Training & Doping in Sports	<ol style="list-style-type: none"> 1. Definition & Importance of Psychology in Physical Education & Sports; 2. Developmental Characteristics at Different Stages of Development; 3. Adolescent Problems & their Management; 4. Team Cohesion and Sports; 5. Introduction to Psychological Attributes: Attention, Resilience, Mental Toughness <ol style="list-style-type: none"> 1. Concept and Principles of Sports Training 2. Training Load: Over Load, Adaptation, and Recovery 3. Warming-up & Limbering Down – Types, Method & Importance
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			<ol style="list-style-type: none"> 4. Concept of Skill, Technique, Tactics & Strategies 5. Concept of Doping and its disadvantages
5	August	Physical Fitness, Wellness, and Lifestyle	<ol style="list-style-type: none"> 1. Meaning & importance of Wellness, Health, and Physical Fitness. 2. Components/Dimensions of Wellness, Health, and Physical Fitness 3. Traditional Sports & Regional Games for promoting wellness 4. Leadership through Physical Activity and Sports 5. Introduction to First Aid – PRICE
6	September	Test, Measurement & Evaluation	<ol style="list-style-type: none"> 1. Define Test, Measurements and Evaluation. 2. Importance of Test, Measurements and Evaluation in Sports. 3. Calculation of BMI, Waist – Hip Ratio, Skin fold measurement (3-site) 4. Somato Types (Endomorphy, Mesomorphy & Ectomorphy) 5. Measurements of health-related fitness
7	October	Fundamentals of Anatomy, Physiology in Sports	<ol style="list-style-type: none"> 1. Definition and importance of Anatomy and Physiology in Exercise and Sports. 2. Functions of Skeletal System, Classification of Bones, and Types of Joints. 3. Properties and Functions of Muscles. 4. Structure and Functions of Circulatory System and Heart. 5. Structure and Functions of Respiratory System.

8	November	Fundamentals Of Kinesiology And Biomechanics in Sports	<ol style="list-style-type: none"> 1. Definition and Importance of Kinesiology and Biomechanics in Sports. 2. Principles of Biomechanics 3. Kinetics and Kinematics in Sports 4. Types of Body Movements - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation 5. Axis and Planes – Concept and its application in body movements
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COMPUTER

SI No.	Month	Chapter	Topics
1	June	1.Data Types	<p>Introduction to Problem-solving: Steps for Problem-solving (Analyzing the problem, developing an algorithm, coding, testing, and debugging), representation of algorithms using flowchart and pseudocode, decomposition</p> <p>Familiarization with the basics of Python programming: Introduction to Python, Features of Python, executing a simple “hello world” program, execution modes: interactive mode and script mode, Python character set, Python tokens(keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use</p> <p>of comments Knowledge of data types: Number(integer, floating point, complex), boolean, sequence(string, list, tuple),None, Mapping(dictionary), mutable and immutable data types.</p>
2	July	2. Operators	<p>arithmetic operators, relational operators, logical operators, assignment operators, augmented assignment operators, identity operators (is, is not), membership operators (in not in)</p>
3	August	3.Expressions	<p>statement, type conversion, and input/output: precedence of operators, expression, evaluation of an expression, type-conversion (explicit and implicit conversion), accepting data as input from the console and displaying output.</p>
4	September	4. Python Errors, Flow of Control	<p>Errors- syntax errors, logical errors, and run-time errors</p> <p>introduction, use of indentation, sequential flow, conditional and iterative flow.</p>

5	October	5. Conditional statements Iterative Statement	if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number. For loop, range(), while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number, etc.
6	November	6. Strings	introduction, string operations (concatenation, repetition, membership and slicing), traversing a string using loops, built-in functions/methods-len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split()
7	December	7. Lists	introduction, indexing, list operations (concatenation, repetition, membership and slicing), traversing a list using loops, built-in functions/methods-len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list.
8	January	8. Tuples	Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership and slicing); built-in functions/methods - len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple; suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple

9	Feb	9. Dictionary Introduction to Python modules	<p>Introduction, accessing items in a dictionary using keys, mutability of a dictionary (adding a new term, modifying an existing item), traversing a dictionary, built-in functions/methods – len(), dict(), keys(), values(), items(), get(), update(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), sorted()); Suggested programs: count the number of times a character appears in a given string using a dictionary, create a dictionary with names of employees, their salary and access them. Importing module using 'import <module>' and using from statement, importing math module (pi, e, sqrt(), ceil(), floor(), pow(), fabs(), sin(), cos(), tan()); random module (random(), randint(), randrange()), statistics module (mean(), median(), mode()).</p>
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Term I syllabus :- Chapter 1 to 4

Term II syllabus :- Full syllabus .

FINE ARTS

Sl No.	Month	Chapter/ unit	Topics
1	June	Chapter-1. Chapter -2.	1.Pre historic Rock paintings. 2. Bhimbethka- an introduction.(Cave art) Practical -Still life pencil shading drawing (Object drawing) Practical- Still life Colour shading drawing (Object drawing)
2	July	Chapter -3 Chapter -4	3.Study of Rock paintings. 3.1 A Roaring Animal 3.2 Wizard's Dance Practical -Nature study (pencil shading drawing) Practical -Nature study (Colour shading drawing) 4.Art Of Indus Valley Civilization - An Introduction Practical -Still Life (Flower pot drawing with flowers in pencil shading)
3	August	Chapter -5 Chapter -6	5.Study of sculpture & Terracottas 5.1 Dancing girl (Mohan- ko- daro) 5.2 Male Torso (Harappa) 5.3 Mother Goddess (Mohan jo-daro) 6. Study of Seal 6.1 Bull Seal (Mohan jo-daro) Practical - Still life flower pot drawing with flowers (colour shading drawing)
			Practical - Mandala art (pattern drawing,pen shading)

4	September	Chapter -7 Chapter -9	7.Decoration on Earthen wares 7.1 painted Earthenware (jar) 8. Art during Mauryan,Shunga,kushana and Gupta period 9. Study of Sculpture 9.1 Lion Capital from Sarnath (Mauryan Period) 9.2 Chauri Bearer from Didarganj (Mauryan Period) 9.3 Boddhisatva head from Taxila 9.4 seated Buddha from Katra Tila Practical – A lady with pot pencil shading drawing. Practical – Mountain study in Water colour drawing.
6	October	Chapter -9 Chapter -10 Chapter -11	9.5 Seated Buddha from Sarnath 9.6 Jain tirthankara Practical – A Sunset drawing in colour shading. Practical – A man figure drawing in pencil shading 10. Introduction to Ajanta 11.Study of painting 11.1 padmapani Boddhisatva (Ajanta Cave no 1) 11.2 Mara Vijaya (Ajanta Cave no 26)
7	November	Chapter 12 Chapter -13	12. Introduction of Temples sculpture 13. Study of Temples sculpture 13.1 Decent of Ganga (pallava, Mahabalipuram, Tamilnadu) 13.2 Ravana Shaking Mount Kailash(Rashtrakuta Ellora, Maharashtra) 13.3 Trimurti (Elephanta, Maharashtra) 13.4 Laxmi Narayan kendriya Mahadev Temple (Chandela, Khajurahon,M.P) Practical – Geometrical painting drawing pen shading. Practical – Bird painting colour shading . Nataraj

8	December	Chapter -13 Chapter -14 Chapter -15	13.5 Cymbal player, Sun Temple (Ganga Dynasty, Konark,Orissa) 13.6 Mother and Child (vimla -vashahi Temple, Solanki,Dilwara , Mount Abu) Practical – Any stone art(sculpture art)in pencil shading 14. Introduction to Indian Bronzes 14.1 Method of casting (Solid and Hollow) 15. Study of Bronze sculpture 15.1 Nataraj (Thanjavur Disst. Tamilnadu) 15.2 Devi (uma)
9	January	Chapter -16. Chapter -17	16. Artistic Aspects of the indo Islamic Architecture 17. Study of Architecture 17.1 Qutub Minar,Delhi 17.2 Taj Mahal,Agra 17.3 Gol Gumbaj of Bijapur Practical – Any indoislamic monuments drawing in pencil and colour shading

Term I syllabus :- (chapter - 1,2,3,4,5,6,7,8,9)

Term II syllabus :- (chapter - 1 to 17)
