BECHELOR OF SCIENCE
COURSE OUTCOMES
B.Sc. I (BOTANY)

Paper 1 Cell Biology, Genetics and Plant Breeding

CO1	Learn the scope and importance of cell biology, genetics and plant breeding.
CO2	Understanding of techniques of demonstrating mitosis and meiosis in the laboratory and identify different stages of cell division.
CO3	To study the phenomenon of dominance, laws of segregation, independent assortment of genes.
CO4	To understand the different types of genetic interaction, incomplete dominance, dominance, inter allelic genetic interactions, multiple alleles and quantitative inheritance etc.
CO5	Learn about the hybrid methods of the plant to develop a new variety.

B.Sc. I (BOTANY)
Paper 2 Microbiology, Mycology and plant Pathology

CO1	To Know about organisms and causal factor responsible for plant diseases & methods of studying plant diseases.
CO2	Familiarize with some common plant diseases of India.
CO3	Gain knowledge on Host parasite interaction process.
CO4	Students will analyze about the different types of microorganisms and their significance.
CO5	Demonstrate an understanding of the principles of plant pathology and the application of these principles in the control of plant disease

B.Sc. I (BOTANY)
Paper III: Algae, Lichen and Bryophyte

CO1	Learn about the structure, pigmentation, food reserves and methods of reproduction of Algae, lichen and Bryophyte.
CO2	To understand about the Economic importance of algae, lichen and Bryophyte.
CO3	Know the Economic Importance of Fungi and features of Lichens.
CO4	Gain adequate knowledge on comparative account of various alga, Lichen and Bryophyte divisions.
CO5	Students will have clear idea of the characteristics of the important plant groups taught in this paper.

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B.Sc. I (Zoology)
Paper I: Diversity of Animals

CO1	To classify phylum porifera with taxonomic Keys.
CO2	To describe the phylum Coelenterate and its polymorphism.
CO3	To identify the given Mollusca with respect to economic importance.
CO4	To describe general characters of Nematohelminthes and their parasitic adaption.
CO5	To explain classification of protozoa and diseases caused by them.

B.Sc. I (Zoology)
Paper II: Cell Biology and Genetics

CO1	Students will be able to Describe cell cycles and its regulation.
CO2	Can Understand molecular biology techniques.
CO3	Explain causes and role of extinction in evolution.
CO4	To identify chromosomal mutations and in borne errors of metabolism.
CO5	To describe differences between prokaryotic and Eukaryotic cells.

B.Sc. I (Zoology)
Paper III: Gamete and Developmental Biology

CO1	Explain the developmental process that leads to the development and differentiation of the body.
CO2	Explain different developmental stages in vertebrates.
CO3	Familiar with various stages involved in the developing embryo.
CO4	Apply the knowledge to collect various biological data.
CO5	Understand the initial development all procedures involved in amphioxus, frog and chick.

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B.Sc. I (Chemistry)

Paper I: Inorganic Chemistry

CO1	To make student understand the modern periodic table which stand the backbone in understanding chemistry and the periodic properties like atomic and ionic size ionization etc.
CO2	Student can understand S block elements in detail, understanding the behavior of the inert gases.
CO3	Student aware of definition of oxidation, reduction, oxidizing agent and reducing agents according to classical concept electronic concept, oxidation number concept.
CO4	Students can analyze basic utility of components of inorganic chemistry.
CO5	The research and the development has evolved to the level high and as a result of that the human life standard has thus enhanced day by day medicinal, infrastructural home utilities etc. facilities like electronic equipment's and the drugs may use any of the states of the matter like solid liquid gases plasma and Bose Einstein condensate state

B.Sc. I (Chemistry)
Paper II: Organic Chemistry

CO1	Student can remember different organic compounds with respect to the functional group and become eligible to call the name of the organic compounds scientifically.
CO2	Students become eligible to study the subject initially by understanding the basic things for chemical reactions i.e. substrate and reagents.
CO3	Many of the daily used materials are organic compounds and majority of them are hydrocarbons therefore this topic makes the concept regarding their formation.
CO4	Students can analyze electrophilic and nucleophilic hemolytic and heterolysis fission. Electron mobility Inductive effect etc.
CO5	To learn stereochemistry of chiral compounds arises due to presence of stereo-axis; concept of stereoisomerism and concept of conformations of stereo isomers.

B.Sc. I (Chemistry)
Paper III: Physical Chemistry

CO1	To understand the concept of basis of physical states of matter.
CO2	To study the concepts of rate of reactions and their mechanisms.
CO3	To learn depth knowledge about liquid states and concepts of colloids and gels.
CO4	Student can analyze the functional groups through element detection..
CO5	Chemical kinetics, collision theory, absolute reaction rate theory, catalyzes these topics will help students to evaluate the physical properties of chemical reaction.

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B.Sc. I (Physics)
Paper I: Mechanics

CO1	Students will remember the study of vectors, laws of motion, momentum, energy, rotational motion, gravitation, elasticity and special relativity.
CO2	The students would learn about the behavior of physical bodies it provides the basic concepts related to the motion of all the objects around us in our daily life.
CO3	The course builds a foundation of various applied field in science and technology; especially in the field of mechanical engineering.
CO4	Analyze the performance of Rocket Motion (Variable Mass Concept)
CO5	Students will evaluate the definition for center of gravity in hemisphere, hollow hemisphere etc.

B.Sc. I (Physics)
Paper II: Electromagnetics

CO1	Understand the basic concepts of electric and magnetic fields.
CO2	Understand the Faradays laws of electromagnetic induction by Rayleigh's method.
CO3	Study the electric field using coulomb's inverse square law in electrostatics of current.
CO4	Analyze the value of Maxwell equation- boundary conditions and can analyses the chemical and heating effect of current.
CO5	Gain knowledge on EM waves, propagation and their properties.

B.Sc. I (Physics)
Paper III: Optics

CO1	Understand phenomenon based on light and related theories .
CO2	Understand the event like reflection, refraction, interference, diffraction etc.
CO3	Understand how to apply resolving power of different optical instruments in study objects.
CO4	Can analyze working of optical fiber and their applications in communication.
CO5	Understand the applications of diffraction and polarization.

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B.Sc. I (Statistics)
Paper I: Probability Theory

CO1	Have the critical thinking in the theory of probability and its applications in real life problems.
CO2	Apply the theoretical continuous probability distributions like normal, exponential, etc., in the relevant application areas.
CO3	Apply the theoretical discrete probability distributions like binomial, poisson etc. in the relevant application areas.
CO4	Demonstrate understanding of the theory of maximum likelihood estimation.
CO5	Analyze the results and propose recommendations to the decision making processes.

B.Sc. I (Statistics)
Paper II: Descriptive Statistics

CO1	Acquaintance: with various methods of collecting data and get familiar with some elementary methods of data viz. measures of central tendency, dispersion, skewness and kurtosis and to interpret them.
CO2	Will Understand the basic concepts of probability and to find probabilities of various events.
CO3	Will evaluate types of random variables, concepts of conditional probability.
CO4	Students have ability to distinguish between univariate and bivariate probability distributions, transformation of continuous random variable and its application.
CO5	Get knowledge of characteristics of random variables such as expectation, variance and also to compute various generating functions.

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B.Sc. I (Psychology)
Paper I: Basic Psychological process

CO1	Student will remember the basic terminology of psychology.
CO2	Student will understand the biological basis of behavior, sensation & perception.
CO3	To compare the different theories & models of learning & memory.
CO4	Can analyze meaning & different approaches of motivation & emotion.
CO5	To apply different concepts of cognition & problem solving.

B.Sc. I (Psychology)
Paper II: Social Psychology

CO1	Student can remember basics of social psychology.
CO2	They can understand the needs and importance of social psychology for society.
CO3	To relate the meaning of social & person perception for the attitude formation
CO4	Students can compare the meaning of prejudice & discrimination.
CO5	They can explain the meaning & functions of Interpersonal attraction &leadership.

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B.Sc. I (Geography)

Paper 1 - Physical Geography

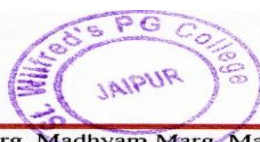|	
CO1	To define the basic terminology of physical and geological history of earth
CO2	To compare the different theories of isostasy ,cycle of erozen
CO3	To Identity the structure and composition of the atmosphere and planetary winds.
CO4	To analyses the different climatic Region.
CO5	To Explain the different surface configuration of ocean bottoms.

B.Sc. I (Geography)

Paper 2 - Rajasthan Geography

CO1	Student remember basics knowledge of Rajasthan Geography.
CO2	To compare the physical features and Environment relationship.
CO3	To identify the mineral resources.
CO4	To classify the development of agriculture and land use.
CO5	To Evaluate the cultural development in Rajasthan.

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B.Sc. I (Economics)
Paper 1: Micro Economic Theory

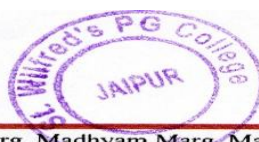| CO1	To Show the scope of economics.
CO2	To illustrate the theory of consumer behavior.
CO3	To identify the production function.
CO4	To analyze the market structure including determination of price and output in the short and long run.
CO5	To Explain the theory of distribution.

B.Sc. I (Economics)
Paper 2 Indian Economy

CO1	To list the basic features and present position of Indian Economy.
CO2	To illustrate the role and importance of agriculture in the Indian Economy.
CO3	To identify the role, strategy and challenges of the industry.
CO4	To analyze the industrial policy of 1991.
CO5	To Explain the objectives and achievements of planning in India including the NITI Aayog.

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B.Sc. II (BOTANY)

Paper I: Molecular biology and Biotechnology

CO1	Understand the biochemical nature of nucleic acids, their role in living systems, experimental evidences to prove DNA as a genetic material.
CO2	Understand the process of synthesis of proteins and role of genetic code in polypeptide formation
CO3	Learn the scope and importance of molecular biology.
CO4	Can apply the fundamentals of tot potency plant tissue culture techniques further.
CO5	Will evaluate the advantages of in vitro propagation in various areas.

B.Sc. II (BOTANY)

Paper II: Plant Physiology and Biochemistry

CO1	Learn and understand about mineral nutrition in plants.
CO2	Understand the growth and developmental processes in plants and know about movement in plants.
CO3	Understand the process of translocation of solutes in plants and know the nitrogen metabolism and its importance
CO4	Understand the current status of Biochemistry and recognize the impact of Biochemistry on socioeconomic aspects of life.
CO5	Realize the industrial application of Biochemistry with the importance of Bio-molecules.

B.Sc. II (BOTANY)

Paper III: Pteridophytes, Gymnosperm and Paleo botany

CO1	Understand the morphological diversity of pteridophytes and gymnosperm and understand the economic importance of pteridophytes and gymnosperm.
CO2	Know the evolution of pteridophytes and gymnosperm.
CO3	Understand gymnosperms with respect to PALEOBOTANY distinguishing characters, comparison with angiosperms, economic importance and classification.
CO4	Know the scope of paleo botany, types of fossils and geological time scale.
CO5	Understand the various fossil general representing different fossil groups.

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B.Sc. II (Zoology)
Paper I Structure and Function of Invertebrate types

CO1	Understand the diversity and classification and functional aspects of different systems of phylum Arthropod, Mollusca and Echinodermata.
CO2	Identify the taxonomic status of the entire non-chordates up to annelids and discuss the evolutionary model of the group.
CO3	Understand the anatomy and physiology of invertebrate animals by dissection.
CO4	Come to know that the resemblance and evolutionary significance of larval forms of echinoderms.
CO5	Understand the diversity morphology, biological characters and taxonomical importance some selected museum specimens of different animal groups.

B.Sc. II (Zoology)
Paper II Animal Physiology and Biochemistry

CO1	Develop understanding for the fundamental concepts of physiology of digestion.
CO2	Develop basic understanding of endocrine system and its interactions with other systems.
CO3	Fundamental concept of bioenergetics in cellular processes.
CO4	Describe the structure and function of enzymes, carbohydrates, Protein and Nucleic acids.
CO5	Attain knowledge of respiration and excretion and understood the mechanism of transport of gages and urine formation.

B.Sc. II (Zoology)
Paper III: Immunology, Microbiology and Biotechnology

CO1	Describe the molecular structure and function of major histocompatibility complex.
CO2	Describe the types and molecular structure of viruses and Bactria.
CO3	Get knowledge of sterilization technique, blotting technique, DNA isolation from cells.
CO4	Understanding of applied Microbiology and Biotechnology.
CO5	Understand the principle and applications of biotechnology techniques – DNA finger printing, blotting technique and micro array.

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B.Sc. II (Chemistry)
Paper I: Inorganic Chemistry

CO1	Understand concept of electrode potential, EMF diagrams and their utility.
CO2	Understand chemistry Transition Elements and their Coordination Compounds
CO3	Study Non-aqueous solvents such as liquid ammonia and liquid Sulphur dioxide.
CO4	To analyses study of Lewis and HSAB concepts of acids and bases.
CO5	Can evaluate heat of neutralizations, enthalpy of solution, transition temperature.

B.Sc. II (Chemistry)
Paper II: Organic Chemistry

CO1	Student will study chemistry of carbohydrates with special reference to structure and configuration of glucose and fructose.
CO2	Understand structure and aromaticity of benzene and mechanism of electrophilic substitution reactions.
CO3	Can understand the concept how to Identify organic compounds.
CO4	To understand about error analysis and computer applications and will know the basic knowledge, types and applications of Redox Reactions.
CO5	Study different classes of aromatic compounds such as aromatic halogen, nitro, amino, diaz onium salts, aromatic sulphonyl acids, phenols, aldehydes and ketones, aromatic acids, polynuclear hydrocarbons, heterocyclic compounds.

B.Sc. II (Chemistry)
Paper III: Physical Chemistry

CO1	Students can understand concepts of thermodynamics (First and second law) and thermochemistry.
CO2	Understand Chemical and Phase Equilibrium.
CO3	Students can apply concepts of electrochemistry, electrochemical cells, buffers and corrosion in various practical method.
CO4	To learn in detail about the first and second laws of chemical thermodynamics and the related terms; to get idea about thermo-chemistry and thermodynamic relationships and system of variable compositions.
CO5	To evaluate the basic concepts of chemical equilibrium and understand about the spontaneity of the reaction.

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B.Sc. II (Physics)
Paper I: Thermodynamics & Statistical method in physics

CO1	Learning fundamental concepts and developing problem solving skills in thermodynamics and statistical mechanics.
CO2	Students will be able to employ fundamental physics concepts and theories to set up and formulate problems in thermodynamics and statistical mechanics.
CO3	Students will be able to apply differential and integral calculus, differential equations, and elementary concepts form probability theory to solve problems in thermodynamics and statistical mechanics.
CO4	After learning the course, the students should be able to analyses basic concept of heat transfer (conduction, convection and radiation) will design various types of basic heat exchanger.
CO5	Students must have understanding of thermodynamic fundamentals before studying their application in applied thermodynamics.

B.Sc. II (Physics)
Paper II: Mathematical Physics and Special Theory of Relativity

CO1	Learn and understand calculus. Starting with review of differentiation, exponential and logarithm functions, trigonometric functions, plotting functions, differentials and basics of integration.
CO2	Understand basics of matrices and determinants i.e. inverses, linear vector spaces, basis, basis transformations and linear operators, determinants, eigenvalues, eigenvectors, simple applications, and basics of tensors.
CO3	Understand the dynamics of rotating objects i.e. rigid bodies, angular velocity, the moment of inertia, parallel axis theorem, the inertia tensor, the motion of rigid bodies. non-inertial frames: pseudo forces, examples involving the centrifugal force and Coriolis force.
CO4	Understand differential equations i.e. ordinary differential equations with constant coefficients, first order ODE's with variable coefficients, second order ODE's partial differential equations, the wave equation and the heat equation, and application of Green's function.
CO5	Understand the use of various Polynomial equations (Hermite, Legendre, etc.)

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B.Sc. II (Physics)
Paper III: Electronics and Solid State Devices

CO1	Understand the basic concepts of electronics components, network theorem, digital electronics, solid state semiconductor devices, amplifier theory, Analog and Digital circuits, basic circuits, design using circuit maker software and their application.
CO2	Students would be able to understand various types of crystal structures and symmetries and understand the relationship between the real and reciprocal space and learn the Bragg's X-ray diffraction in crystals. Would also learn about phonons and lattice.
CO3	Course also includes elastic waves, phonons, and lattice vibrational properties. The course forms a theoretical basis of experimental material science and technology.
CO4	Analyze the relationship between analogue and digital circuits can repair small household electrical and electronics appliances.
CO5	The course is of much practical purpose for the students to learn basics of digital electronics. The digital electronics has wide applications in computing, process control, signal processing, communication systems, digital instruments etc.

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B.Sc. II (Mathematics)
Paper I: Real Analysis

CO1	Describe the fundamental properties of the real numbers that underpin the formal development of real analysis
CO2	Demonstrate an understanding of the theory of sequences and series, continuity, differentiation and integration;
CO3	Understand the concepts of continuous functions on compact metric spaces.
CO4	Tests for existence of the Riemann integral. Develop the idea about the improper integrals.
CO5	Apply the concepts of uniform convergence.

B.Sc. II (Mathematics)
Paper II: Differential Equation

CO1	Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases.
CO2	Recognize differential equations that can be solved by each of the three methods – direct integration, separation of variables and integrating factor method and use the appropriate method to solve them.
CO3	Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution.
CO4	Students will have concept of partial differential equations of first order with its applications as Lagrange`s solution, Char pit's general method.
CO5	Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters.

B.Sc. II (Mathematics)
Paper III: Numerical Analysis and Vector Calculus

CO1	To apply appropriate numerical methods to solve the problem with most accuracy.
CO2	Study and apply the methods of root finding viz. Newton Raphson method , Bisection method , Secant method , Regula falsi method also apply methods of solving linear system of equations viz. Gauss-Elimination , Gauss-Jordan , Gauss-Jacobi and Gauss-Seidel method.
CO3	Using appropriate numerical methods determine approximate solution of ODE and system of linear equation.
CO4	Analyze and evaluate the accuracy of common numerical methods. Compare different methods in numerical analysis with accuracy and efficiency of solution.
CO5	Explain physical meaning of gradient of a scalar field, curl and divergence in terms of fluid flow and also be able to evaluate line integrals, surface integrals and volume integrals

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B.Sc. II (Statistics)
Paper I: Statistical Inference

CO1	The student has basic theoretical knowledge about fundamental principles for statistical inference.
CO2	Will get knowledge about construction of point and interval estimators, and hypothesis testing.
CO3	Will evaluate above estimators and tests. The student has insight in how to construct optimal estimators and tests.
CO4	The student can perform point estimation, hypothesis testing and interval estimation under a large variety of discrete and continuous probability models.
CO5	Student can evaluate the properties of these estimators and tests, for both finite sample sizes and asymptotically as the sample size tends to infinity and can select optimal estimators.

B.Sc. II (Statistics)
Paper II: Statistical Applications in Society and Industry

CO1	Apply the statistical tools in business, economic and commercial areas with the help of time series, index numbers, etc.
CO2	Analyze such problems and to make better decisions for future in their fields.
CO3	Identify the components of time series and the method of measuring trend
CO4	Apply the different measures of variations to forecast the data.
CO5	Construct, evaluate and interpret the index numbers.

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B.Sc. II (Psychology)
Paper 1 Abnormal Psychology

CO1	Students enable to remember the basis of Mental Disorders.
CO2	Can match the causal factors, clinical assessment & diagnosis of mental disorders.
CO3	Will compare the different types of Anxiety Disorders.
CO4	Can classify the different types of Mood, Somatic & Dissociative Disorders.
CO5	To utilize the knowledge of different Feeding & Eating Disorders & Schizophrenia & Other Psychotic Disorders in clinical setting.

B.Sc. II (Psychology)
Paper 2 Psychological Statistics

CO1	To define the basics of statistics in the field of psychology.
CO2	Can relate different concepts of frequency distribution.
CO3	Can classify the different measures of variability.
CO4	To explain the different methods of correlation & hypothesis testing & Inference Making.
CO5	To identify the use of non –parametric & ANOVA Test for the assessment of data.

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B.Sc. II (Geography)
Paper 1 - Resource Geography

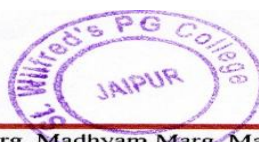| CO1	Will remember the Nature, Scope, and significance of resource Geography.
CO2	To Relate distribution, exploitation, uses and conservation of forest.
CO3	To develop the human resources.
CO4	To analyses the different agricultural resources.
CO5	To utilize the knowledge of different Resources utilization and their conservation.

B.Sc. II (Geography)
Paper 2 - Human Geography

CO1	To define the aims and scope of human geography.
CO2	To describe different concepts of man and environment relationship.
CO3	To classify the world races and their characteristics
CO4	To analyze about different indian tribes.
CO5	To evaluate causes and impact of migration.

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B.Sc. II (Economics)
Paper 1 Introductory Macro Economics

CO1	To Show the meaning, subject matter and importance of Macroeconomics.
CO2	To Illustrate the Basic tenants of Classical,Keynesian,New-Classical and New Keynesian Economics.
CO3	To Identify various determinants of Income and Employment.
CO4	To analyze the various concepts of Multiplier and Accelerator.
CO5	To Explain the organizational set up and Functions of the central bank.

B.Sc. II (Economics)
Paper 2: a) Elements of statistics and Mathematics

CO1	To know about Surds, Indices, Quadratic Equations, Logarithms, Permutations and combinations.
CO2	To Explain Simple integration and its application in the Economics.
CO3	To make use of various statistical methods in economics.
CO4	To analyze the data with the help of Dramatization and graphical representation.
CO5	To asses Simple Correlation and their importance.

B.Sc. II (Economics)
Paper 2: b) History of Economic Thought

CO1	To Recall the views of mercantilism on Trade money, prices wages and employment.
CO2	To Outline the views of Adam smith on Division of labor.
CO3	To Identify various critics of Classical school including Sismondi, Robert Owen and Fredrick List.
CO4	To analyze the Theory of capital accumulation and crisis distribution.
CO5	To Explain the Economics of Kautilya and economic thought of Dada Bhai naroji.

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B.Sc. III (BOTANY)
Paper I: Plant Morphology and Anatomy

CO1	To gain knowledge of plant cells , tissues and their functions.
CO2	To make connections between plant anatomy and the other major disciplines of biology.
CO3	To identify and compare structural differences among different taxa of vascular plants.
CO4	Understand the differences in internal organization of two distinct plant group and plant parts.
CO5	Students get an idea about various floral whorl and its importance in plant reproduction.

B.Sc. III (BOTANY)
Paper II: Ecology and Economic Botany

CO1	Brief studied the economic products with special reference to the botanical name, family, morphology of useful part and the uses.
CO2	To differentiate ecological adaptations of plants, hydrophytes, xerophytes and Mesophytes.
CO3	To distinguish plant succession with reference to hydrosere and xerosere.
CO4	To describe the cultivation practices of oil seeds, timber, fibers and drug yielding plants.
CO5	To acquire an increased awareness and appreciation of legumes and millets.

B.Sc. III (BOTANY)
Paper III: Angiosperm, Taxonomy and Embryology

CO1	Illustrate and interpret various aspects of embryology.
CO2	Understand historical development of taxonomy.
CO3	Apply order sub and super categories of species according to Linne hierarchy in studies.
CO4	Discuss the importance of nomenclature rules in botany.
CO5	Learn about double fertilization and their significance and know about the Structure and development of dicot and monocot embryos.

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B.Sc. III (Zoology)
Paper I structure and Function of chordates

CO1	Identify the taxonomic status of the entire chordates and discussed the evolutionary model of the group.
CO2	Impart the knowledge on ecology of some important fishes, amphibians reptiles, birds and mammals.
CO3	Impart knowledge in comparative anatomy and development systems of chordates.
CO4	Make able to discuss some and very important phenomena in Chordates.
CO5	Know about the conservation and management strategies of the chordate fauna.

B.Sc. III (Zoology)
Paper II Ecology, Environmental Biology and Evolution

CO1.	Understand and appreciate the environment and ecological services of life on earth.
CO2	Understand the abiotic factors of environment and biogeochemical cycle and intraspecific relationships of animals.
CO3	Acquire knowledge of ecosystem, food chain, energy flow and productivity and understood pond as a model ecosystem.
CO4.	Impart knowledge of habitat ecology, pollution and bioremediation of polluted environment.
CO5	Obtain the knowledge about direct observation of fossils and evolutionary important specimen by which evolutionary relationship of animal groups.

B.Sc. III (Zoology)
Paper III Applied Zoology, Ethology and biostatistics

CO1	Students will learn applications of zoology in agriculture and other industries.
CO2	To understand bio statistical techniques.
CO3	Attain knowledge of data collection, tabulation and presentation of data and measures of central tendency, probability and chi-square test.
CO4	Identify various methodology and perspectives of applied branches of zoology.
CO5	Get basic understanding of human genomics and ethology.

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B.Sc. III (Chemistry)
Paper I: Inorganic Chemistry

CO1	Understand crystal field theory for coordination compounds and their electronic spectra.
CO2	To learn the complex metric and gravimetric estimation of different ions, chromatographic separation of (i) Ni (II) and Cu (II) ions, (ii) Fe (III) and Al (III) ions.
CO3	Get knowledge of Environmental Chemistry including environmental pollutants, Greenhouse effect and global warming. Acid rains, Ozone layer
CO4	To study the chemistry of s and p block elements including noble gases and their compounds in detail.
CO5	To evaluate in detail about modern periodic table, physical and chemical properties of the elements along a group or period, factors influences those properties, relativistic effects and inert pair effect.

B.Sc. III (Chemistry)
Paper II: Organic Chemistry

CO1	Students will remember chemistry of different reaction intermediates.
CO2	Students will enable to understand elimination reactions (E1, E2 and E1CB mechanisms), Selected Molecular rearrangements and important name reactions.
CO3	Study Chemistry of common Polymers and polynuclear hydrocarbons such as Anthracene and Phenanthren.
CO4	Study chemistry of quinoline, isoquinoline and indole.
CO5	Help to know experimentally the qualitative analysis of single solid organic compounds.

B.Sc. III (Chemistry)
Paper III: Physical Chemistry

CO1	Student can recognize elementary Quantum Mechanics.
CO2	Understand molecular structure and their physical properties.
CO3	Student will study the colligative properties of the solution and instrumentations.
CO4	Student can analyze rotational, Vibrational and Electronic Spectroscopy.
CO5	Understand the limitation and origin of Quantum Chemistry.

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B.Sc. III (Physics)
Paper I: Quantum Mechanics and Spectroscopy

CO1	Quantum mechanics provides a platform for the physicists to describe the behavior of matter and energy at atomic and subatomic level.
CO2	The course plays a fundamental role in explaining how things happen beyond our normal observations. The course includes the study of Schrodinger equations, particle in one dimension potential, quantum theory of H like atoms, atoms/molecules in electric and magnetic fields
CO3	The course provides an understanding of the behavior of the systems at microscopic (atomic and nuclear) scale and even smaller. Students would learn basic postulates and formulations of quantum Mechanics.
CO4	Develop the idea of spin and quantum statistical mechanics
CO5	Use the tools, methodologies, language and conventions of physics to test and communicate ideas and explanations

B.Sc. III (Physics)
Paper II: Nuclear and Particle Physics

CO1	In this course students would know about the general properties of nuclei, nuclear forces and detectors, radioactive decay and nuclear reactions.
CO2	The course expands the knowledge of students especially, the various applications of nuclear physics The course builds a foundation for the students to carry out research in the field of nuclear physics, high energy physics, nuclear astrophysics, nuclear reactions and applied nuclear physics.
CO3	The course is important for the students to learn about the most fundamental building blocks of matter and radiation, interaction among elementary particles and hence to understand their behavior.
CO4	Apply the knowledge of basic laws of conservation and momentum in the determination of particle properties and properties of processes in the subatomic world.
CO5	Ability to apply fundamental conservation laws and symmetries to judge the viability of production and decay processes for nuclei and elementary particles.

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B.Sc. III (Physics)

Paper III: Solid State Physics

CO1	Understand the basic concepts of force between atoms and bonding between molecules.
CO2	Understand crystal vibrations: phonon heat capacity and thermal conductivity.
CO3	Understand free electron Fermi gas: density of states, Fermi level, and electrical conductivity.
CO4	Understand semiconductors: band gap, effective masses, charge carrier distributions, doping, pn junctions.
CO5	Understand the properties of matter and classifications - polarization and semi-conductors.

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B.Sc. III (Mathematics)
Paper I: Algebra

CO1	Acquiring knowledge of basic abstract systems of Mathematics.
CO2	Understand the normal sub group and Quotient groups
CO3	Demonstrate understanding of the importance of homomorphism and isomorphism in groups. Develop the idea about the rings, integral domain, field and maximal ideal.
CO4	Review of rings and homomorphism of rings, Ideals, Algebra of Ideals, Maximal and prime ideals, ideal in Quotient rings.
CO5	Acquiring knowledge of vector space, Internal direct sum and External direct sum. Understand the Linear Independence & Quotient space. Demonstrate understanding of the importance of inner product space. Develop the idea about the linear transformation, matrices.

B.Sc. III (Mathematics)
Paper II: Complex Analysis

CO1	Understanding of the basic concepts underlying complex analysis.
CO2	Have learnt to expand the given function in terms of Taylor's and Laurent's series.
CO3	Have knowledge about the absolute and uniform convergence of power series, continuity of sums of power series, integration and differentiation of power series and their properties.
CO4	Have learnt the isolated singular points, residues, Cauchy's residue theorem and their properties.
CO5	Demonstrate understanding and appreciation of deeper aspects of complex analysis such as the Riemann Mapping theorem. Have knowledge in the evaluation of improper real integrals and their properties.

B.Sc. III (Mathematics)
Paper III: Mechanics

CO1	To explain the concepts and determine the resultant of forces and moments
CO2	To understand and find solution using vector integration
CO3	To apply laws of mechanics to determine efficiency of simple machines with consideration of friction
CO4	To learn skills to applying concept of moment and product of inertia in many problems.
CO5	Upon successful completion of this course, students would be able to Apply Newton's laws and conservation laws to elastic collisions and motion of rigid bodies.

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B.Sc. III (Statistics)
Paper I: Sample Surveys

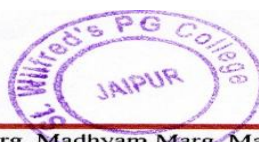|	
CO1	Can formulate and calculate the estimators of population mean, population total, population ratio of two variables, the percentage and the total number of units in the population that possess some characteristic.
CO2	Estimate the convenient sample size for SRS method.
CO3	Apply the stratified sampling method and the simple estimation method in stratified sampling.
CO4	Calculate required sample size for the estimators in stratified random sampling.
CO5	Estimate the parameters for equal and unequal cluster sizes.

B.Sc. III (Statistics)
Paper II: Design of Experiment and Computational Techniques

CO1	Design of experiments provides the statistical tools to get maximum information from least amount of resources.
CO2	The students would also be provided with mathematical background of various basic designs involving one-way and two way elimination of heterogeneity and their characterization properties.
CO3	Course would also prepare the students in deriving the expressions for analysis of experimental data.
CO4	Analyze independently-collected data to answer a research question.
CO5	Learn the common pitfalls and misconceptions in carrying out inferential statistical analyses.

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B.Sc. III (Psychology)
Paper 1: Positive Psychology

CO1	Will define the basics of positive psychology.
CO2	Can relate the different viewpoints of happiness with its determinants & sources.
CO3	Will illustrate the different classification models of virtues & strength of character.
CO4	To interpret the meaning & different theories of resilience, self – regulation & self – control.
CO5	To apply the meaning of well- being & mental health into existence.

B.Sc. III (Psychology)
Paper 2: Psychological Testing & Assessment

CO1	Student can remember the basics of assessment in psychological testing procedure.
CO2	Can understand the different types of psychological test to its history of development & process of administration.
CO3	To explain the meaning & types of reliability, validity & norms.
CO4	To compare the different methods of calculating reliability, validity & norms.
CO5	To organize the application of psychological test in clinical setting.

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(Affiliated to the University of Rajasthan)

B.Sc. III (Geography)
Paper 1 - World Regional Geography

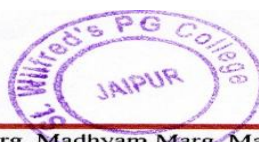| CO1	To Define the regional geography of Asia and Europe.
CO2	To Compare the physiographic divisions of Asia and Europe.
CO3	To apply the general introduction of North and South America.
CO4	To analyses regional study of New England and Brazil.
CO5	To evaluate the terrain pattern of Australia and New Zealand.

B.Sc. III (Geography)
Paper 2 - Indian Geography

CO1	To define the basics of Indian Geography.
CO2	To Illustrate utilization policies and conservation forest .
CO3	To Identify and Differentiate major crops.
CO4	To be classified industrial regions.
CO5	To Evaluate regional disparities in economics development.

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B.Sc. III (Economics)
Paper 1 Introduction International Trade, Development and Public Economics

CO1	To List the concepts of city international trade, Gains from trade.
CO2	To demonstrate the working of international monetary fund and WTO.
CO3	To identify the Economic growth and Development and the factors affecting the economic growth.
CO4	To Analyze the Balanced and unbalanced Growth model, Harrod Domer and Solow Models.
CO5	To explain the nature and scope of Public finance and the role of Government in the society.

B.Sc. III (Economics)
Paper 2 (a) Application of Mathematics in Economics

CO1	To List the application of Differential and integral calculus.
CO2	To demonstrate the theory of Consumer behavior Nature of a Utility function.
CO3	To identify the properties of a well behaved and homogenous production functions.
CO4	To Analyze the optimization behavior of a firm.
CO5	To explain the Graphical and Simplex methods of the linear programming.

B.Sc. III (Economics)
Paper 2 (b) Environmental Economics

CO1	To relate the microeconomics with welfare economics.
CO2	To demonstrate concepts and measurements of Sustainable development.
CO3	To identify the environmental problems.
CO4	To Analyze the global warming and climate change.
CO5	To explain the international environmental policy.

B.Sc. III (Economics)
Paper 2 (c) Economy of Rajasthan

CO1	To introduce the students to the various aspects of the economy of Rajasthan.
CO2	To help the students understand the role of various sectors in Rajasthan's economy.
CO3	To identify the various issues related to the growth and development of the state.
CO4	Analyze the position of Rajasthan in Indian economy on the basis of various economic parameters.
CO5	Comprehend the importance, contribution and growth of agricultural and industrial sectors of Rajasthan.

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