

Maharani Sudarshan College for Women, Bikaner

Course Outcome

Arts Faculty

Economics

BA ECONOMICS (Three-year programme)

Programme outcomes

Economics is the study of how societies, governments, businesses, households, and individuals allocate their scarce resources. The study of economics also provides valuable knowledge for making decisions in everyday life.

The principal aims of objectives of the BA Economics programme are:

- To demonstrate the ability to employ the "economic way of thinking"
- To provide students a well-founded education in Economics
- To provide structured curricula which support the academic development of students and to prepare them for employment and further study of economics.

Course outcome

Subject: Micro Economics

BA Pt.1

Subject code: 115-I

The course enables the students to:

- Understand how households (demand) and businesses (supply) interact in various market structures to determine price and quantity of a good produced
- familiarize with the basic economic problems
- To evaluate the Pattern of consumer and producer behavior
- To be aware about Price determination of firms under different market structures
- To have a better awareness regarding different Factor Pricing Rent, Wages, Interest, Profit.

Subject: Economy of Rajasthan

BA Pt.1

Subject code: 115-II

The course empowers the students to:

- Not only be aware of the economy as a whole, but they would also understand the basic features of Rajasthan's economy, sources of revenue, the procedure of financing by the state government to its program and projects and to know about natural and human resources and their potentials.

Subject: Macro Economics

BA Pt.2

Subject code: 215-I

Upon successful completion of the course students will be able to:

- understand how an economy is moving as a whole with the basics of national income accounting and roles of fiscal and monetary policy in fighting recessions and inflation
- To analyze the goal of economic growth and growth models and how It helps to bring stability in price level and analysis fluctuations in business activities.

Subject: Indian Economy

BA Pt.2

Subject code: 215-II

The course enables the students to:

- Develop ideas of the basic characteristics of Indian economy, its potential on natural and human resources
- Understand primary, secondary and tertiary sectors development as the foundation of economic growth and their contribution to the economy as a whole.
- Grasp the importance of planning and economic reforms taken by the government.

Subject: Money Banking and Public Finance

BA Pt.3

Subject code: 315-I

The course makes the students capable:

- To understand the monetary system, financial institutions and the financial markets along with the functioning of the banking system, credit creation and efforts to control credit
- To know the fundamentals of government activities that how a government collects revenues, and how and where to spend it.

Subject: quantitative techniques BA Pt.3 Subject code: 315-II

The course exposes the students to:

- Have an introductory idea about statistical methods and tools (correlation & regression) that are essential for the empirical and analytical study of economics
- Demonstrate an ability to apply various statistical tool to solve business problem

MA ECONOMICS (Two years programme)

PROGRAM OUTCOME

The purview of Economics is widespread and it flanks almost every field related to human beings.

- The subject matter of M.A Economics programme covers the fields of micro and macro economics , Agriculture, Industry, Banking, labour, Planning and Development, Public Finance International Trade. Since these are the main subject content of State Level and National Level competitive examinations, banking service, railway service examinations and other competitive examinations the students of Economics can easily crack such examinations and can become successful in getting employment opportunities.
- completion of PG Degree in Economics with good knowledge opens up research opportunities in the national level premier Educational Institutes like IISc, IITs, MBA, Delhi School of Economics, BITs, Piloni, etc.
- The real understanding of the subject content of M.A. Economics helps in the character building of students and makes them responsible citizens. They are exposed to national and international problems and hence they will have a thorough understanding of national and international economic events.

Course outcome

Subject: micro economic analysis

Paper I

Subject code:

At the completion of the course, students will be able to:

- Do a comprehensive and analytical study of various aspects of economic behavior of individuals, firms and markets, behavior of costs and revenue, and to have a better awareness regarding different factor pricing -Rent, Wages, Interest, Profit and about the economics of welfare.

Subject: Macro Economic Analysis

Paper II

Subject code:

The course empowers the students to

- Do empirical Analysis of macro-economic variables, measurement of economic performance, Business cycles, stabilization policies and critical evaluation of classical and Keynesian model along with theories of consumption function.

Subject: Statistics

Paper III

Subject code:

The course makes the students capable to

- Providing the training and understand the economic problems by using the techniques of mathematical and statistical analysis, which are commonly applied to understand and analyze economic problems.

Subject: Public Finance

Paper IV

Subject code:

At the completion of the course, students will be able to

- Understand the financial and fiscal aspects of the government and the role of the government to mobilize resources

Subject: Growth and Planning

Paper V

Subject code:

The course makes the students capable

- To get acquainted with the theories of growth and development, social and institutional aspects of development, importance of agriculture, industrialization in developing countries and relevance of planning

Subject: International Economics

Paper VI

Subject code:

At the completion of the course, students will be able to

- Provide a deep understanding about the broad principles and theories of comparative advantage, which tend to govern the free flow of trade in goods, services and capital – both short term and long term – at the global level.
- examine the impact of the trade policies, terms of trade followed both at the national and international levels along with their welfare implications at macro level

Subject: Advanced Indian Economy

Paper VII

Subject code:

The study of the course makes the students capable for

- Empirical analysis regarding all round development concerning economic reforms in india, foreign trade policy, fiscal development, national income and policy for improving income and wealth distribution in India.

- Discussion on the demographic aspects, concept of resources, rational and planned use of resources with recent changes in industrial and licensing policy.

Subject: Banking System (elective paper)

Paper VIII

Subject code:

The course enables the students to

- Analyze the significant role of 'Banks', money and financial markets in economic development. It provides essential and thorough knowledge to the economics students relating to the theoretical aspects of Indian banking system and financial sector reforms, structure of Development banks in India.
- Go through overall development of future banking in Rajasthan

Subject: Labour Economics (elective paper)

Paper IX

Subject code:

The course empowers the students to

- Analyze theoretical as well as empirical issues related to the labor market, trade unions, wage theories, social security with special reference to UK, USA and India.

English Literature

Programme outcomes for English Literature

The English literature programme tends to develop intellectual, personal and professional abilities in students. By studying literature the students can enhance their communication skills and their behavioural attitude also reaches to higher standards. At the same time study of literature also imparts joy to its readers and they possess and ameliorated approach towards life.

Programme Specific outcomes

The curriculum designed for English Literature covers all the literature from early British period to post-Colonial Period. It opens wide area of literary tradition which makes them familiar with various aspects of each of the literary age. They discover an amalgamation of emotions and thoughts. They know about the history of literary ages and how history shapes the mind of the literary artists. At the same time, it encourages reading and writing habits in the students. The extensive reading and writing improve their command over the language. The study of literature gives the students the opportunity to explore their creativity in reading, writing, and enhance their thinking capacity. The course prepares students for future success.

Course Outcomes

BA Part-I- Paper-I Poetry and Drama

To introduce the students with all forms and genres of poetry and drama.

To familiarize them with literary ages from Elizabethan age to Romantic age.

To make them capable to comprehend the literary texts and multiple genres.

To improve communication skills in the students.

BA Part-I-Paper-II Prose and Fiction

To introduce them to prose and fiction.

After finishing the course, the students are able to differentiate between fiction and non-fiction.

Reading of essays and stories encourage their creativity. They can now attempt to write stories on their own

BA Part-II- Paper-I Poetry and Drama

After Completing This Course, the Students will be able to:

- Compile Salient Features of Victorian Age and Modern Age and Its Impact on Literature.
- Critically Analyse Poetry and Drama Prescribed in Their Syllabus.

BA Part-II-Paper-II Prose and Fiction

- Utilise Their Knowledge in Spoken English.
- Think About Their Aim of Life While Reading Essays, Stories and Novels of Hardy.

BA Part-III- Paper-I Poetry and Drama

- After finishing final year, the students are now familiar with all forms of poetry and drama.
- They are also introduced with various literary terms.

- They are acquainted with post-colonial literature.
- They have also gone through and can distinguish between Anglo-Indian Literature and Indo-Anglian Literature.
- They can now trace out and compare various writing techniques of Indian as well as European writers.
- They are also familiar with Commonwealth Literature.
- They now have an all -round approach to world literature.
- They have studied Indian Renaissance.

BA Part-III-Paper-II Prose and Fiction

- The final year course of prose and fiction imparts recognition of Indian Prose and Fiction.
- The students have now developed understanding of the lessons imparted in the essays and stories.
- They have developed awareness of environment conservation; importance of studies; ethical usages of internet; social and Gender equality, etc.

MA Previous Paper I- English Language and Documentation

- This paper will enable students to learn the nuances of language, which in turn will help them to understand language in a better way.
- Read and appreciate the works of great writers, express themselves clearly in writing as well as vocally in English, which a global language, needed to connect to the rest of the world.

MA Previous Paper II- Renaissance to Jacobean Age

- The paper introduces students to the earliest authors and poets of English Literature.
- They will be able to discuss the Elizabethan Poets, Prose Writers and Dramatists.
- The Social and Cultural history of the age will be familiar to them.

MA Previous Paper III- Caroline to Neo-Classical Age

- To introduce students to literary ages from Caroline to Neo-Classical Age and Pre-Romantic Age.
- To familiarize them with the socio-cultural structure and scenario of the age.
- To comprehend and compare between neo-classicism and pre-romanticism
- To introduce them with literary criticism of the age.

MA Previous Paper IV- The Romantic Age

- Skill Development of Students to Express Themselves in Global Language i.e., English.
- Assess the Poetry, Prose and Novels of Romantic Age.
- Evaluate That; Movement Towards Nature Can Save Humanity Even in Pandemic

MA Final Paper V- Principles of Criticism

- Students will be able to understand the concept of criticism.
- They are explored to the various schools of criticism
- From Greek Criticism that begins with Aristotle to the Post-Colonial Criticism that goes beyond the critics like Bhabha and Jan Mohammad are introduced to the students.
- Indian Critical Theorists like Bharata and Kuntaka are familiar to the students.
- Students will be able to read and understand all schools of poetry after finishing the course.
- They will be able to apply the critical theories in the texts they are going to study further.

MA Final Paper VI- Nineteenth Century Literature

- Identify the Basic Elements of Victorian Age and Victorian Literature.
- Explain Effects of Industrialisation, Science and Rapid Urbanisation on **Literature**

MA Final Paper VII- Twentieth Century Literature

- After finishing the course, the students will be able to understand the catastrophe of the world war and its effect on literature.
- The problem play is now a familiar term to them.
- They will be able to understand the need and beginning of feminist literature.
- The social scenario of the modern age will be clear to the students.

MA Final Paper VIII- Women's Writing

- This paper will expose them to the concept of Feminism.
- To make them understand how the voices of women have evolved and expressed through the ages.

- They will also understand the way they have been and considered inferior to male writers.

MA Final Paper IX-A- Indian Writing in English

- The objective of the course is to acquaint students with growth of Indian Writing in English and understanding Indian culture through English Language.
- Students will become familiar with important Indian writers of Poetry, Prose, Drama and Fiction.
- Students will understand the socio-economic, political and cultural issues of India as depicted in the works of major Indian writers.
- The students will become familiar with the Indian culture to a great extent and will enrich their understanding of Indian poetry, drama tradition and important aspects of novel writing.

GPEM

B. A. Part – I

Paper I – Textiles

- Student will be able to explore the world of Textiles through the journey which start from fibre and ends on fabric end use.

Paper II – Business and Government Industries

- Student will be able to know about market, marketing and merchandising techniques.
- Student can add marketing/selling in creative products on small scale.

Practical – Textiles

- Students can explore fabric ornamentation techniques by using colour, dyeing, printing and embroidery. Student will be able to develop and produce a product by using designing skills.

B. A. Part – II

Paper I – Pattern Making and Dress Designing

- Student can learn about concept of pattern making for different requirements and able to add their creativity in it.
- Student will be able to design and create a garment by using fashion and design components.

Paper II – Export Policies and Documentation

- Student can understand Indian export system, finance, and documentation for export marketing.

Practical – Pattern Making and Dress Designing

- Students will be prepared to work in Fashion Industries and as an entrepreneur in the garment construction and pattern making.

B. A. Part – III

Paper I – Costumes and Textiles of India

- Students can develop an understanding about ancient to modern Indian costumes.
- Students will be able to differentiate between embroidery work of different states and use them in a new way.

Paper II – International Marketing

- Students will be able to critically analyse the international market, challenges and market entry strategies.
- Students can plan, develop and sell a product on digital market.

Practical – Clothing

- Students will be able to explore and bring into practice their ideas through embroidery and costume designing.
- Students will be able to stitch or construct a complete garment according to the given requirements.

History

Course Outcomes

BA Part I

PAPER-I : HISTORY OF INDIA FROM EARLIEST TIMES TO 1206 A.D.

After the completion of the course the student should be able to

- Understand the Ancient history of India
- Discuss main features of Indus-Saraswati Civilization
- Explain the rise of Buddhism and Jainism
- Discuss the contribution of Magadha Empire and the causes of their decline
- Explain the different political power in Pre-Gupta period

- Discuss the features of Gupta Dynasty
- Explain the India in Post-Gupta Period

PAPER-II : HISTORY OF MODERN WORLD (1453-1950 A.D.)

After the completion of the course the student should be able to

- Explain Reformation and Counter Reformation
- Discuss the American war of Independence
- Explain the French Revolution
- Explain Unification of Italy and Germany
- Discuss First World War
- Explain the causes of imperialism in Asia and Africa
- Discuss the causes of rise of Fascism and Nazism
- Explain the causes and results of Second World War
- Explain the emergence of Modern China, Japan and Turkey
- Discuss the functions of UNO

BA Part II

Paper- I: History of Medieval India (1206-1740 A.D.)

After the completion of the course the student should be able to

- Understand the medieval history of India
- Political condition, administrative and economic regulation in medieval India
- The establishment of Mughal Empire
- Nature of Mughal State

PAPER- II : HISTORY OF RAJASTHAN FROM EARLIEST TIMES TO 1956 A.D.

After the completion of the course the student should be able to

- Outline the proto-historic Rajasthan
- Explain the origin of Rajputs
- Explain the causes and impact of Maratha penetration in Rajputana
- Discuss the Peasant of Bijolia
- Explain the contribution of Prajamandals in freedom movement
- Discuss the Feudalism in Rajput states
- Explain the Rajasthani art and literature

BA Part III

PAPER-I: MODERN INDIAN HISTORY (1740-1956A.D.)

After the completion of the course the student should be able to

- Explain the British expansion in Bengal
- Discuss the emergence of regional power
- Discuss the Maratha struggle with British Power
- Explain the causes of the failure of the Marathas
- Explain the economic impact of British Rule
- Discuss the main features of Permanent settlement, Raiyyatwari and Mahalwari revenue settlements
- Discuss the economic Impact of British Rule
- Outline of India's struggle for freedom
- Discuss the reorganization of Indian states.

Paper- II: FOUNDATIONS OF INDIAN CULTURE

After the completion of the course the student should be able to

- Discuss the main features of Indian culture
- Discuss varna and ashram system
- Discuss main centres of ancient Indian Education
- Explain the cultural importance of the Puranas
- Explain the salient features of the Indus and Mauryan Art
- Explain the Architecture of Mughal period

- Explain the Bhakti and Sufism
- Explain the socio-religious contribution of Brahma Samaj
- Explain the socio-religious contribution of Arya Samaj

Hindi Literature

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Home Science

BA program outcome

- Understand and appreciate the role of interdisciplinary sciences in the development and well-being of individuals, families and communities.
- Understand the importance of food and health to enhance the quality of life of people.
- Acquire professional and entrepreneurial skills for economic empowerment of self in particular and community in general.
- Develop skills in food, nutrition, textile, housing, product making, communication technologies and human development.
- Take sciences from the laboratory to the people.
- Instill skills to succeed in the employment market with passion for lifelong learning.

BA Part I

Paper -I- Family and Community Science

- Take science from laboratory to the people
- Assess body health parameters such as blood pressure at home
- Understand terms related to food and nutrition, diseases, community health

Paper II Extension Education

- The Course will enable the students to understand the significance and value of extension work.
- Enhancement of conceptual understanding of villagers by teaching them

Practical I

- Study different methods of cooking food

- Obtain knowledge on different food groups and nutrients present in the food
- Be able to plan recipes related to different foods and demonstrate their cooking skills

Practical II

- To disseminate different rural technologies through various extension activities and teaching -Aids
- To build the manpower for serving the rural community
- Demonstrate and provide location specific solution to resolve rural people problems
- Students get opportunities for skill building by preparing teaching its
- To increase the work efficiency of rural females by giving demonstration of different effective techniques.

BA Part II

Paper I Food and Nutrition

- Understand the food nutrients and their function
- Understand the impact of nutrients on the human bodies
- Understand meal planning and its importance
- Skills to prepare special therapeutic and health needs
- Gain knowledge on food preservation, adulterants, food hygiene and sanitation
- Be competent in planning healthy. diet for various vulnerable age groups

Paper -II Textile and laundry

- To develop an understanding of basic knowledge of Textile
- To impart skills in basic techniques of stitching
- To develop a bridge between scientific knowledge and traditional knowledge

Practical Food and Nutrition BA Part II

Paper I

- Acquire knowledge on diet plan for various age, activity and income group
- Be able to plan therapeutic diets for various diseases
- Understand concept of menu, and plan menu for various occasions

Paper II

- To train about different types of embroidery and dyeing
- To understand the fabric handling, seams
- To develop drafting skills to express design ideas
- To impart basic techniques stitching skill

BA Part III

Paper I Human Development

- Explain the broad theoretical perspective framework of human growth and development across life span
- Perceive the importance of family and community in the development of the children with special needs

Paper II Interior Decoration and Designing

- To impart the fundamental knowledge of all the recourses.
- Learning to identify and manage the use of resources available for functional use.
- Appreciation of the significance of management process in efficient use of resources.
- To prepare base for higher degree

Practical Paper I

- Develop awareness in the students regarding important aspects of development during the life span of an individual
- Students perceive the importance of family and community in the development of the children

Practical Paper II

- To develop capability of working enthusiastically and united with working in team with assignment tasks and well-coordinated group living

- Becoming money time and energy conscious in daily living

MA (Home Science) Programme Outcome

The importance of Home Science has further increased to meet the demands of the modern society. The knowledge of Home Science is derived from physical, social, and biological science and many arts, which is applied towards achieving better, healthier and happier homes.

- The knowledge of Home Science improves the quality of life
- Helps in the best utilization of resources to get maximum satisfactions and returns
- Teaches the application of modern science and technology to improve domestic life
- Help to improve family relationship
- Develops in the students the necessary skills and technique required for better home making and family living
- Help to solve the day-to-day problem
- Help in changing the values, attitudes and interests
- Promote the moral, familial and spiritual aspects of family living
- Enables the person for many carrier opportunities
- Promoting satisfactory personal family and community life by developing the qualities needed for responsible and creative living.

PAPER I RESEARCH METHODOLOGY

- Gain knowledge about research, its objectives, types, process and instruments of data collection
- Sharpen competence in research approaches
- Understand the purpose and procedures of research study
- Acquire knowledge for basic and advanced research
- Develop competence in drafting research proposal and scientific writing

PAPER II HUMAN AND COMMUNITY NUTRITION

- Understand the basic concepts of food and nutrition
- Get acquainted with functions, requirements, food sources, effects of deficiency and excess of various nutrients
- Gain knowledge on basic principles involved in food preservation and food spoilage
- Acquire knowledge about RDA, Food laws and standards
- Grasp understanding about community health, community nutrition, techniques of assessment of nutritional status
- Be aware about various aspects of nutrition education
- Be familiar with the policy and intervention programs to overcome malnutrition
- Be prepared for various jobs, competitive exams as well as develop entrepreneurial skills

Paper III HUMAN DEVELOPMENT

- Course involves a thorough study of child and human development to the students.
- The course will enable the students to understand the significance and value of child development.
- Become acquainted with development stages from birth to old age.
- Students perceive the importance of family and the community in the development of the children.

Paper IV RESOURCE MANAGEMENT AND CONSUMER ECONOMICS

- Develop sensitivity, resource fullness and competence to render service to families, communities and the nation at large.
- To develop competency for application of knowledge in family community and workplace.
- Becoming familiarized to changing trends in consumerism.
- To create professional competency in research & development, teaching, government and public service and entrepreneurship

PRACTICAL I HUMAN AND COMMUNITY NUTRITION

- Acquire knowledge about planning and preparation of nutrient rich dishes and preserved food items; table setting
- Use combination of foods in the development of food products
- Identify and control adulterants in various foods
- Gain knowledge on pricing and labeling of food items
- Identify nutritional problems prevalent in the society

PRACTICAL II RESOURCE MANAGEMENT AND CONSUMER ECONOMICS

- To impart and develop skill for professional development.

- Register and react as responsible consumer.
- Enrich knowledge on market system.

PAPER V INSTITUTION MANAGEMENT

- Get acquainted with types of food service institutions, food production and styles of service
- Gain knowledge on personnel management, budgeting and recruitment
- Discuss the types and role of records in a food unit
- Prepare income-expenditure and profit-loss statements
- Acquire knowledge about types and importance of menu and its appropriateness for customer satisfaction
- Develop insight about recipe standardization and quantity food production
- Know about personal hygiene, quality control and challenges faced by food service institutions
- Groom students for various jobs and entrepreneurial skills
- Get prepared for various competitive exams. NET, SLET, etc.

Paper VI FAMILY RELATIONS AND FAMILY WELFARE

- Explore the diversity and complexity of contemporary families
- Make aware about different marriage patterns and demonstrate variations in family life
- Make aware about laws related to marriage and intervention Programs for exceptional children
- Acquire professional and entrepreneurial skills as marriage and family counselors

Paper VII TEXTILE AND CLOTHING

- To enable students to gain knowledge of design, textile design and fashion
- To impart and develop creative skills in designing and constructing garments
- To develop a bridge between scientific knowledge and traditional knowledge
- To develop students with latest knowledge of textiles, apparel design, fashion and related disciplines
- To provide the students with a more formal understanding of the textile for future career opportunities within that field

PAPER VIII EXTENSION TECHNIQUES AND PROGRAMMES

- Topic helps in dealing with various areas of extension education and community health
- The course will enable the students to understand the significance and value of extension work

PAPER IX- A ADVANCE NUTRITION AND DIETETICS

- Gain knowledge about meal planning, it's importance and requirements during various stages of life cycle.
- Be able to provide required Nutritional care and treatment for various diseases.
- Gain knowledge on type and role of dietitian.
- To impart and develop skill for professional life
- Skills to prepare special therapeutic/ health foods.

PAPER IX- B EARLY CHILDHOOD CARE AND EDUCATION

- Know the importance of early childhood years and significance of intervention programs for early childhood development
- Develop insight into the historical development- global and Indian including the current programs and policies in early childhood care and education programme in different contexts in India
- Familiarize with Indian models of early childhood education and explore the current early childhood research, theoretical trends and issues
- To learn about different curriculum models and pedagogical approaches in Early childhood education
- Impact knowledge on programmed planning for young children

PRACTICAL V INSTITUTION MANAGEMENT

- Market survey for availability of various foods
- Plan menus for various food service institutions
- Standardize recipes for different cuisines at large scale
- Manage quantity food production for various occasions, record keeping, pricing and sale of product
- Visit to various food service institutions to understand their work culture

PRACTICAL VI FAMILY RELATIONS AND FAMILY WELFARE

- Identify the critical family situations and problems at different stages of family life cycle and get equipped with coping strategies.
- Learn critical evaluation of Nursery and plan activities and visual aids to provide informal education.
- Understand customs and practices in Indian marriages.
- Analyze the traditional functions/roles versus contemporary during different stages of family life cycle.

PRACTICAL VII TEXTILE AND CLOTHING

- To impart and develop creative skills in designing and constructing garments.
- To develop drafting skills to express design ideas.
- To develop students with latest knowledge of textiles, apparel design, fashion and related disciplines.
- To develop formal understanding of the textile for future career opportunities within that field.

Practical VIII EXTENSIN TECHNIQUES AND PROGRAMMES

- This course will allow the students to learn and understand the people of villages and their problems
- Students learn and understand the benefits steps of programme planning with various and appropriate teaching methods

PRACTICAL IX- A ADVANCE NUTRITION AND DIETETICS

- Plan and prepare suitable therapeutic diets based on patient need for various diseases and disorders.
- Understand dietary counseling for prevention/ treatment of various diseases and disorders.
- Acquire knowledge on special therapeutic/ health foods.

PRACTICAL IX B EARLY CHILDHOOD CARE AND EDUCATION

- It attempts to provide students with an enabling and conducive environment for teaching and learning by interacting with children
- Students get opportunities for skill building by preparing teaching aids
- Learn to plan program for children according to their age and capacity

Mathematics

B.A (Mathematics)

Programme Outcome

- Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
- A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved.
- Ability to analyse a problem, identify and which may be appropriate to its solution.
- Introduction to various courses like group theory, matrix theory, calculus and vector calculus, geometry (2D &3D), N.A, OT, Analysis and mechanics.
- Enhancing students' overall development and xz solving skills, creative talent and power of communication necessary for various kinds of employment.
- Ability to pursue advanced studies and research in pure and applied mathematical science.

Programme Specific Outcome of B.Sc. Mathematics

- Think in a critical manner.
- Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
- Formulate and develop mathematical arguments in a logical manner.
- Acquire good knowledge and understanding in advanced areas of chosen by the student from the given courses.
- Understand, formulate and use quantitative models arising in social science, Business and other contexts.

Course Outcomes: -

B.A –Part -I

9137- Paper-I - Algebra

- Learn to solve system of linear equation and its application.

- Learn to solve matrices, determinants, inverse matrices and rank of matrices.
- Learn to find roots of cubic, biquadratic and Cardan and Ferreris method.
- Learn to find graphs, roots and primes integer.
- Explain the significations of the notation of a group, subgroup, normal subgroup, and homomorphism.
- Acquire the notation of permutation and operation of them.

9137- Paper-II Calculus

- Describe the concepts and applications of derivative and higher order derivatives.
- Develop competency in applying the idea of partial derivatives.
- Gain Knowledge of fundamental basic concepts of differentiation and integration.
- Introduction to curve, pedal equation and maximum or minimum.
- Introduction beta and gamma function, Qudarvolume, double and triple integral.
- Acquire the concept of asymptotes and envelopes.

9137- Paper-III Vector Calculus

- Acquire the basic knowledge of vector differentiation and vector integration.
- Evaluate line, surface, double and triple integral and use these integrals to verify the seminal integral theorems (Green's theorem in the plane, Gauss' divergence theorem and Stokes' theorem)
- Compute the curl, gradient and the divergence of vector.
- Use Green's theorem to evaluate line integral along simple closed contours on the plane. Apply Stokes' theorem to compute line integrals along the boundary of a surface
- Introduction to analytical geometry of 2 & 3 dimensional. Finding equation in various form sphere, cones, cylinder & central coincides and its applications.
- Explain the ideas of conics and their various applications. Find the polar equation a line, circle, tangent and normal of conic.

B.A – Part -II

9237- Paper-I Higher Calculus

- Gain Knowledge of fundamental concepts of real numbers.
- Verify the value of the limit of a function at a point using the definition of the limit ($\epsilon - \delta$).
- Introduction to sequence and series.
- Learn to check function is continuous understand the consequences of the intermediate value theorem for continuous functions.
- Student will be to understand differentiation and fundamental theorem in differentiation and various rules.
- Geometrical representation and problem solving on MVT, Rolle's, Lagrange's, Taylor's and Maclaurin's theorem and its reminder.

9237- Paper-II- Differential Equation

- Understand the order, degree and various standard forms of differential equations.
- Determine solutions to first order linear differential equations and solutions to first order exact differential equations.
- Determine solutions to second order linear homogeneous differential equations with constant coefficient.
- Obtain power series solutions of differential equations and identify and obtain the solution of Clairaut's equation.
- Familiarize with the various techniques of finding the solution of the differential equation $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$
- Acquire the idea of Monges method for solving the second order linear partial differential equations.

9237- Paper-III- Mechanics

- Explain basic idea of equilibrium condition, type of forces.
- Explain the geometry of the motion of particle in plane curve, i.e., position, velocity, and acceleration and how those quantities are related through calculus.
- Learn Newton's laws of motion and examines their application to wide variety of problems.
- Learn the basic concept of composition and resolution of forces and friction.
- Understand and visualize the real physical problem in term of mathematics.

- Learn one dimensional (SHM), multi- dimensional and constrained motion.

B.A – Part -III

9337- Paper-I- Advanced Algebra

- Students will be able to define ring and subrings.
- Study of ideals and concept related to ideal.
- Study of various integral domains in ring.
- Introduction to field.
- Introduction to vector space and subspace.
- Use computational techniques and algebraic skills essential for the study of systems of Linear equations, matrix algebra, vector spaces, eigenvalues and eigenvectors, Orthogonally and Diagonalization.

9337- Paper-II- Analysis

- Compute sums, products, quotients, conjugate, modulus, and argument of complex numbers · Define and analyse limits and continuity for complex functions as well as consequences of continuity ·
- Conceive the concepts of analytic functions and will be familiar with the elementary complex functions and their properties ·Determine whether a given function is differentiable, and if so, find its derivative. Applies the theory into application of the power series expansion of analytic functions ·
- Understand the basic methods of complex integration and its application in contour integration. · Analyse sequences and series of analytic functions and types of convergence, · Evaluate complex contour integrals directly and by the fundamental theorem, apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula.
- Able to understand the Euclidean distance function on R^n and appreciate its properties, and state and use the Triangle and
- Explain the definition of continuity for functions from R^n to R^m and determine whether a given function from R^n to R^m is continuous
- Distinguish between open and closed balls in a metric space and determine whether a given sequence in a metric space converges.

9337- Paper-III – Numerical Analysis & Optimization Techniques

- Develop linear programming (LP) models for shortest path, maximum flow, minimal spanning tree, critical path, minimum cost flow, and transshipment problems.
- Understand the mathematical tools that are needed to solve optimization problems.
- Formulate pure, mixed, and binary integer programming models.
- Formulate the nonlinear programming models.
- Use some solution methods for solving the nonlinear optimization problems.
- Examine the appropriate numerical differentiation and integration methods to solve problem.

Music

Course Outcomes

BA Part I - 123 I theory paper I

After completing this course, the students will be able to –

- Describe the Ragas and Write Bandishes of Ragas prescribed
- Write prescribed Talas with Laykaris
- Understand some fundamental technical terms
- Understand folk Music and different forms of Musical Compositions
- Understand contribution of the musicians who have marked significant place in the field

123 II theory Paper II

- After completing this course, the students will develop -
- Understanding of fundamental principles of Hindustani Music and different beliefs on Origin of Music
- Be able to Present Dhun/ Light piece/ Dhamar/ Dhrupad
- Ability to understand apply the Indian Notation systems

- Basic Diatonic scale, tone, semi tone, major tone & minor tone.
- Knowledge of the Dance forms of India and structure & Usage of Musical instruments
- Understanding role of Music in Life and Music as a career,

123 III Practical paper I

Completing this course, The student will –

Be able to critically explain Ragas

Become well-versed with the techniques of singing or playing, as the case may be.

Grasp the various grammatical aspects of the prescribed ragas

Be able to Present Dhun/ Light piece/ Dhamar/ Dhrupad

Completing this course, The student will –

- Be able to present on Stage prescribed Ragas covering vilambit and Drut Khayal/Gat in prescribed Ragas.
- Be able to demonstrate Alankars in prescribed Thats
- Learn the application of Talas

123 IV Practical paper II

Completing this course, The student will –

- Be able to critically explain Ragas
- Become well-versed with the techniques of singing or playing, as the case may be.
- Grasp the various grammatical aspects of the prescribed ragas
- Be able to demonstrate Tali/Khali of prescribed Talas and Layakaris

BA PART II 223 Theory paper I

The students will be exposed to –

- Comprehend the theoretical details of prescribed ragas and their comparative study and write notations of Songs (Bandish), Gats
- Write prescribed Talas in notation with Dugun and Chaugun.
- Compare Margi and Deshi Sangeet, Gandharva and Geeti gan Avartan and Vibhag and Sa – Shabd and Nih- Shabad Kriya.
- Understand Gram – Moorchhana.
- Understand Ravindra Sangeet and popular Music composition of Karnatika Music.
- brief Knowledge of folk dances of India
- Have basic knowledge of Staff Notation System.

223 Theory paper II

After completing this course, the students will be able to -

- Grasp the outline of important Granths of Music
- Classify Musical instruments
- Have basic Knowledge of Rag- Lakshan, Swasthan- niyam, Avirbhav- Tirobhav, Alpatv- Bahutva, Ragalap- Roopkalap.
- Describe Indian Taal System with Ten Pranas.
- Know Impact of folk music on Classical Music.
- Understand interdependence of Religion and Music.
- Argue role of Music in National integration.

223 Practical I

After completing this course-

- The student will develop the confidence to perform a raga for a long duration of time.
- The student will be able to demonstrate the finer nuances of raga in a detailed performance
- The student will have the opportunity to showcase his skill in semi-classical and folk genres of music

223 Practical II

Be able to demonstrate Tali/Khali of prescribed Talas and Layakaris

BA Part III 323 Theory paper I

The students will be able to –

- Comprehend the theoretical details of prescribed ragas and their comparative study and write notations of Songs (Bandish), Gats
- write Theka, Dugun, Tigun & Chougun of prescribed tals
- Define types of Taan and Gamak.
- understand Shurti-Swar arrangement, Sarna- Chatushtai Placement of Shudh and Vikrit swars on the string of veena according to ancient and modern scr
- Define dhatus and Angs of Prabandh. comprehend Kaku, Rag and Ras and Psychological aspects of Music

323 Theory paper II

Completing this course will enable the students to understand -

- Development of Music in modern era, Origin of Gharanas, Their development and their utility in present context.
- Chronological journey of Rag Classification
- Shudh and Vikrit Swars of Hindustan and Karnatak systems of Music.
- contribution of some great musicians.
- Haveli Sangeet Tradition.
- Importance and application of Kaku

323 Practical I

After completing this course-

- The student will develop the confidence to perform a raga for a long duration of time.
- The student will be able to demonstrate the finer nuances of raga in a detailed performance.
- The student will have the opportunity to showcase his skill in semi-classical and folk genres of music

323 Practical II

Completing this course, The student will –

- Be able to critically explain Ragas and perform them with Upaj
- Become well-versed with the techniques of singing or playing, as the case may be.
- Grasp the various grammatical aspects of the prescribed ragas
- Be able to Present Dhun/ Light piece/ Dhamar/ Dhrupad
- Be able to demonstrate Tali/Khali of prescribed Talas and Layakaris
- Be able to acquire aptitude and thirst for higher education and research in Music and prepare for becoming a performer

Philosophy

B.A. (Programme) in Philosophy

Programme Learning Outcomes:

- Understanding of various philosophical theories and having a critical opinion on these theories.
- Understanding the enormous extent to which the present world has been shaped by the thoughts of great philosophers since antiquity.
- Inculcation of various philosophical skills like critical thinking, analytical ability and ability to synthesize information.
- Building up of fresh perspectives on various domains of existence- individual, social, political, religious and the like.
- Using the knowledge and skills acquired through BA Programme in Philosophy to come up with novel solutions to real world problems
- Demonstrate an in depth understanding of important philosophers and their theories.
- Demonstrate their knowledge of profound philosophical problems in various branches of philosophy like metaphysics, epistemology and ethics.
- Develop good logical ability in the sense of thinking and talking logically.
- an ability to engage in a healthy dialectic even with those with whom they might disagree.
- Demonstrate an ability to listen carefully to others' arguments.
- Demonstrate a keen awareness about the various issues – ethical, social, political or religious- that affect the world.
- develop an ability to apply their philosophical training in handling real life issues – both individual as well as social.

B. A. PART I

PAPER-I: INDIAN PHILOSOPHY

Course Learning Outcomes:

- The students familiar with Indian Intellectual traditions will be able to demonstrate their understanding of the main concepts and theories within the broad framework of Indian philosophy.
- They will be able to analyze their knowledge of the distinctions as well as the commonalities between the various schools of Indian philosophy.
- They will be able to express their understanding of the chief metaphysical and epistemological standpoints in Indian Philosophy.

PAPER-II: ETHICS (INDIAN AND WESTERN)

Course Learning Outcomes:

- The students will be able to understand the basic theoretical aspects of the discipline of Ethics.
- They will also be able to understand the ethical framework of Western as well as Indian philosophy and will be able to demonstrate the knowledge of the main ethical theories in philosophy.
- Develop and defend ethical principles that underlie our judgments in particular situations. identify some of the main philosophical approaches to ethics;

B.A. PART-II

Paper I- WESTERN PHILOSOPHY

Course Learning Outcomes:

- The students will be able to demonstrate the knowledge of the main thinkers and theories of Western philosophy from antiquity up to the modern era.
- They will be able to understand the continuities as well as the ruptures in the Western philosophical narrative.

Paper- II- LOGIC

Course Learning Outcomes:

- The students will be able to demonstrate their knowledge of the basic concepts and tools of the discipline of Symbolic Logic.
- They will be able to demonstrate their understanding of the different logical devices and will be able to apply these tools in the philosophical discourse.
- Course Learning Outcomes: The students will be able to demonstrate the knowledge of the basic skills and knowhow of the discipline of Deductive Logic.
- They will be able to understand the different logical concepts and will be able to demonstrate the knowledge of the application of these concepts in the philosophical discourse
- Student will not commit formal or informal fallacies in exams, class discussions, or papers.

PAPER II: Philosophy of Religion

Course Learning Outcomes:

- students will choose, develop and defend notions concerning the problem of evil in a formal, written mini-research paper.
- students are expected to accurately explain course readings on the midterm and final exams, and orally in-class.
- Successful students will be able to use philosophical concepts correctly, as measured on the midterm and final exams, papers, and in-class discussions.
- students will show that different approaches to the philosophy of religion have been learned by writing essays on the midterm and final exams
- Show understanding of philosophical approaches to religion by choosing to critique or defend one well defined position be able to state a view fully and carefully, give reasons for that view, and defend the view against common objections, as measured by exams, class discussions and papers.

PAPER II: SOCIAL AND POLITICAL PHILOSOPHY

Course Learning Outcomes:

- This course will enable the students to have an understanding of the fundamentals of socio- political philosophy.
- The students will be able to understand its interdisciplinary nature.
- They will also understand the significance of the political concepts that are at play within the society.

B.A. PART-III

GROUP -A

PAPER I: PHILOSOPHY OF SAMKHYA-YOGA

Course Learning Outcomes:

- The students will be able to demonstrate their understanding of the theoretical Samkhya and Yoga as well as practical dimensions of Yoga.

- They will be able to master and employ the skills inherent in various Yogic practices to facilitate a harmonious development of body and mind
- Student would be able to use basic concepts of yoga in future for enhancing yoga skills

GROUP -A

PAPER I: PHILOSOPHY OF BHAGAVAD-GITA

Course Learning Outcomes:

- Develop the right perspective
- Understand that change is the law of nature: According to the Gita, everything has to change.
- Practice tolerance and forgiveness: Tolerance teaches us to face the hardships of life with
- Change the way one thinks Having positive thoughts help us achieve a balanced perspective, Know one's True Self.
- Follow Your Purpose in Life
- Follow to act according to dharma or duty
- Enables to work according to situations or take Action. Build Experience. When you take action, you build up a surplus of experiences and skills grow

GROUP -A

PAPER II: PHILOSOPHY OF EDUCATION

Course Learning Outcomes:

- It helps to identify conflicts and contradictions in any theory.
- It develops the human capacity to raise questions about theory.
- It helps to have clarification of various implicit and explicit educational issues.
- It in fact enables stakeholders in schools to hold views in education that are consistent with other domains of human and non-human life.
- To organize all their experiences in the field of morality, politics, psychology, religions, linguistics, etc via critical thinking commonly aided by logic.
- Philosophy of education allows you to discover alternative dimensions of meaning that conventional wisdom have missed in guiding theory and practice in education.

GROUP -B

PAPER II: MENTAL ABILITY AND REASONING

Course Learning Outcomes:

- The mental ability test problems, sometimes called Mental Aptitude problems, test the reasoning & interpretation skills of candidates. This is done by looking at how a candidate approaches problem of the test. It is not very easy to test thinking of a candidate since, unlike in other subject's vis-a-vis Physics, Maths, Biology, English etc., there is not an established theory to it. However, over the years, mental ability test has moulded itself in...
- This discovery will help to tackle and solve a lot of complicated educational problems and challenges.

GROUP -B

PAPER II: Contemporary Indian philosophy

Course Learning Outcomes:

- Identify some of the foundational problems and issues of modern Indian philosophy critically engage with select Indian philosophical texts of the modern period and identify, summarise, and criticise, in an intellectually sensitive way, the philosophical positions of these texts.
- Relate some of the core concepts and theories of modern Indian philosophy to concepts and ideas in classical Indian philosophy.
- Identify different ways of "doing philosophy", develop an ability to use a variety of philosophical approaches in addressing contemporary issues, and gain an appreciation of how these approaches may be integrated more practically as a "way of life".

Political Science

Program Outcome for UG

- Write clearly and with purpose on issues of International and Domestic politics and public policy.
- Analyse political and policy problems and formulate policy options.
- Discuss the major theories and concept of Political Science and its subfields.
- Analyse political problems arguments information and or theories.

Course Outcome

B A Part I

Paper. 1 Foundation of Political Science

- The course gives us basic knowledge of political science
- This paper gives wide information's of classic and modern approach. Concepts, theories of political science
- The paper helpful of students for competition exams
- The paper is very relevant of political science students

Paper. II. Indian political thinkers

- This paper very important of classic medieval and modern periods
- The paper Topics are very useful of research scholars
- This paper relevant of many competition exams
- This paper gives us wide knowledge of rogon state theory, swadeshi, ahinsa etc.

B A Part II

Paper. 1. Major political system

- Students are study of the constitution of United Kingdom, united states of America, japan, china, Pakistan, France, Switzerland.
- this paper is very important in the sense of that Indian students are known different countries constitution and make easy understanding of own state system
- Indian political system

Paper. II. Indian political system

In the study of the paper of Indian political system.

students are known about Indian political system and Indian constitution and they must understand their fundamental right and fundamental duties and mostly know about responsibility of state in the directive principal of state policies

BA Part III

Paper .I. Western political thinker (From Plato to Marx)

- Student will be able to origin of the knowledge in political thought
- identify the most important contribution to modern Western political thoughts and explain why their contributions are important. explain the central concept in modern Western political though

Paper. II. International Relation

- Student will be able to develop theoretical insight on International Relation and global politics this will help them undertaking in academic assignment and research project related with international issues.
- International and Regional organisation students understand the Indian foreign policy and relation between neighbouring countries.

Program (Outcome) for PG

The department is dedicated to promote teaching and research in diverse fields of political science including Indian politics, comparative politics, international politics, human rights, diplomacy, public administration, international law while maintaining the scholarship in some of the conventional fields like political theory and political philosophy, presently, the department of offering master's and PhD program in political Science

1 Political Science and society: -

understanding the inter relationship between policy decisions and its effects on society, this is achieved through a comprehensive teaching of the practice of public administration in India.

2 Critical thinking

the ability to analyse and predict socio political phenomena waste on the study of exciting socio-economic determinants and past experiences this goal is achieved by training student in different method and tools of investigation such as empirical research methods survey Research and data analysis of subject

3 Effective citizenship

The course curriculum inculcates among students a basic understanding of the rights and duties of citizenship and thereby to act as a responsible citizen through the observation of important days such as Independence Day, republic day

4 Communication.

Establishments of linkage between academic and civil society at large so as to successfully address social political problem

Course outcome

Paper. I. Western political theory

- Western political theory's study is very important for all students who are select the options of political science.
- students are known about past and present of Western state and they are well knowing about political development political culture, political modernization, political socialization and that's helpful for comparison self-political system.

Paper. II. Comparative politics and government

- 1 This paper presenting comparative Analysis of world political system
2. This paper is very fruit full of Research scholar
3. This paper give basic concepts of comparative politics
4. This paper useful of PG students

Paper. III. International politics

Upon successful completion, students will have the knowledge and skill to

- A sound grasp of the key elements of Indian traditions or thought about international relations and foreign policy
- The understanding of the fundamental of foreign policy making in India
- Understanding of the foreign policy challenge facing India

Paper. IV. Public administration theory and practice

- Student will be able to outline the definitional and factual knowledge necessary for understanding what public administrator actually do and how do it.
- identify and describe the major theories of public organisation and bureaucratic behaviour.

Paper. V. Political Theory

- Explaining the concept of Democracy, its types and theories (Elitist, Pluralist and Marxist) relating to it.
- To understand the concept of Development and various views and Perspective relating to it. i.e., Liberal, Marxist, Sustainable Development, Human Development and Gandhian Model of Development.
- Understanding basic concepts of Justice, distributive justice, multiculturalism and social justice.
- Explaining the nature of Third World Countries and Neo-Colonialism.
- Explaining the views of Andre Gunder Frank in terms of Dependency Theory.

Paper VI. Government and politics in India

- To understand the philosophy of Indian constitutions.
- Introducing the Indian Constitution with a focus on the evolution of it and examining the essence of the Preamble.
- To know the salient features of Indian constitution
- Examining the Fundamental Rights and Duties of Indian citizens with a study of the significance and status of Directive Principles.
- Critically analyzing the important institutions of the Indian Union: The Executive: President; Prime Minister, Council of Ministers; Governor, Chief Minister and Council of Ministers; The legislature: Rajya Sabha, Lok Sabha, Speaker, Committee System, State Legislature, The Judiciary: Supreme Court and the High Court:
- composition and functions- Judicial activism

Paper. VII. Public international law

- This paper is giving us law knowledge of international disputes
- The paper very interesting and useful of research scholars
- This paper Topics are give help of writing research Articles
- The paper canted Resent issues

Paper. VIII. Diplomacy: theory and practice

- Has a broad understanding of the history of diplomacy in relations between two countries.
- There is a general understanding of the various issues on which diplomacy currently takes place
- Acquire various aspects of diplomatic practice, from the fast end of coercive diplomacy to the soft end of cultural diplomacy, political diplomacy and economic diplomacy;

IX. paper. Human rights and Duties: theory and practice

- This course enables students to develop a theoretical understanding of the concept of human rights and duties.
- It gives a historical and global perspective on human rights and duties.
- The course outline also contains a detailed institutional framework at up to the deal with human rights violations.
- The inclusion of an understanding of rights of various vulnerable sections of society gives within the Human Rights perspective provides a global testimony two importants of rights to all.

Public Administration

Program outcome of B.A

Student will be able to understand -

- Concept of Administration and its Interdisciplinary approach.
- Basic foundation and capacity building for career choice.
- To inculcate sense of Good Governance and better citizenship.

Program outcome of M.A

Student will be able to understand-

- Deeper understanding of Organizational Behaviour and Pattern.
- Competitive Strategy for UPSC and RPSC or other PSC.
- Policy making and decision making in Administration.
- Research Skill enhancement.

Course Outcome of B.A Part I

Paper I- Elements of Public Administration

- Understand the foundation of subject and its Evolution.
- Develop skills in understanding principles of organization and leadership styles.
- Understand the various process of recruitment, training and promotion in Administration.

Paper-II –Public Administration in India

- Clear understanding of Indian Administration system and processes.
- Develop to understand the process of budget formulation, approval and its execution.
- Informed about the personnel system prevailing in India.

Course outcome of B.A Part II

Paper I- Administrative Institutions in India.

- Develop a clear understanding of Constitutional, Statutory and Departmental institutions in India.
- Learn about the Role and functions of political parties and pressure groups.
- Inculcating the understanding of finance, Election Commission, Railway Board and Central Social Welfare Board.

Paper II- State Administration in India

- Comprehend the administrative set up in Rajasthan
- Develop understanding of Centre- State Relations and Administration.
- Develop an overall understanding about Revenue and Personnel Administration.

Course outcome of B.A Part III

Paper I- Comparative Administrative Systems

- Learn about the administrative system of various countries like UK, USA and France.
- Know about the Role of civil services in these countries.
- Understanding the Comparison between administrative systems of various countries.

Paper II- Local Administration in India

- Learn about Rural and Urban Local self- government.
- Learn Role of the agencies associated with PRIs and Urban bodies.
- Understanding election process of Local Bodies and Role of executives.

Course Outcome of M.A Previous

Paper I - Administrative theories and Management

- Deeper understanding between theoretical and practical aspects of Administration and Management.
- Role of leadership style and motivational perspective in Administration
- Develop understanding of policy Making and Implementation
- Deep understanding of Citizen charter and Public Choice Approach
- Comparative understanding between public and private administration.
- Learn role of LPG and PPP Model.

Paper II- Administrative Thinkers

- Theories, concept and Models of eminent thinkers like Riggs, Weber, Taylor and Fayol.
- Views of Traditional thinkers to Modern thinkers like Kautilya to Robert Dror.
- Role of various Administrative Thinkers in development of the Discipline.
- Motivational theories given by eminent thinkers like Maslow, McGregor, Herzberg and Rensis Likert.

Paper III- Comparative Public Administration

- Administrative and political system in various countries like UK, USA, France and India
- Comparative study of Personnel system in Various countries.
- Know about Specific agencies of various countries like IRCs, British Treasury and Council d'état in France.
- Regulatory bodies for control on Administration like Ombudsman, Parliamentary Commissioner and Council d'état.
- Grievance Redressal system between employee and employer in various countries.

Paper IV -Public Personnel Administration

- Deep understanding of Personnel Administration of various countries
- Recruiting bodies and Recruitment system
- Training and Promotion system
- Disciplinary action and rights of civil servants in various countries.
- Comparative studies of civil services

Course outcome of M.A final

Paper V- Public Administration in India

- Complete understanding of Indian Administration system.
- Learn about Economic, Financial and Personnel administration.
- Various Administrative Reforms in India.
- Know about Regulatory bodies like CAG and Lokpal.

Paper VI- State Administration in India with special reference to Rajasthan

- Learn about Political and Government system in Rajasthan
- Evolution of State Administration and position of state in India.
- Personnel Administration and Budgetary system in Rajasthan
- Know about various Administrative agencies working in Rajasthan.

Paper VII- Economic policy and Administration

- Understanding Administration from Economic point of view.
- Study of Five-year Planning and NITI Aayog.
- Economic reforms in India and Role of Administration in Economy.
- Impact of Globalization on Public Undertakings.
- Know about Economic Policies in India.

Paper VIII- Social Administration

- Study of Social Administration at Centre and State level.
- Know about Development Administration and Administrative Development.
- Know about the Concept of Human Rights in India and Disaster Management in India.
- Develop understanding about Voluntary Organizations and NGOs.

Paper IX- Research Methodology and Statistics in Public Administration

- Developing Research Skills in Students.

- Motivation for further studies in Public Administration.
- Understanding Conceptual, Theoretical and Analytical view.
- Use of Statistical Tools in Research of Public Administration.

Sanskrit

पाठ्यक्रम की फलश्रुति

बीए पार्ट प्रथम

प्रथम प्रश्न पत्र

इकाई 01 – नाटक – स्वप्नवासवदत्तम्

भास के साहित्य को समझा जा सकता है। नाटक लेखन के क्षेत्र में इस ग्रंथ से सहायता मिलती है।

इकाई 02– रामायण – बालकाण्ड – प्रथम सर्ग

रामकथा का सार मिल जाता है। इससे पता चलता है कि भगवान राम ने न तो भगवती सीता को निकाला था और न ही षम्बूक को मारा था।

इकाई 03– मनुस्मृति

तत्कालीन समाज व्यवस्था की एक झलक मिलती है। इससे यह समझ में आता है कि समाज में क्या उचित है और क्या अनुचित।

इकाई 04 – हितोपदेश

कहानी लेखन के लिए यह एक आदर्श सिद्ध होता है।

इकाई 05 – अलंकार

काव्य गीतों की रचना में इससे पर्याप्त सहायता मिलती है।

द्वितीय प्रश्न पत्र

इकाई 01 – भारतीय संस्कृति के तत्व

प्राचीन भारत की संपूर्ण व्यवस्था को समझने के लिए मानक ग्रन्थ की तरह है।

इकाई 02– पद्य साहित्य – रघुवंश

कालीदास के पद्य साहित्य को समझने के साथ पद्य रचना में इससे प्रभूत सहायता मिल सकती है।

इकाई 03– अनुवाद

संस्कृत बोलना और लिखना दोनों में यह सर्वोत्तम सहायक है।

इकाई 04 एवं 05 – व्याकरण – लघु सिद्धान्त कौमुदी

संस्कृत Hkk"kk esa शुद्ध रचना करने में यह बहुत उपयोगी है। इससे Hkk"kk का ज्ञान बहुत बढ़ता है। कर्ता और क्रिया के द्वारा वाक्यों के निर्माण में यह बहुत सहायक है।

बीए पार्ट द्वितीय

प्रथम प्रश्न पत्र

इकाई 01 एवं 02 – नाटक – vfHkKku'kkdqUrye

इससे कालिदास साहित्य को अच्छी तरह से समझा जा सकता है। यदि लेखन में रुचि हो, तो लेखन की शैली का आदर्श रूप क्या हो, यह इसमें मिलता है।

इकाई 03– छंद

गीतों की रचना करने में यह सबसे सहायक सिद्ध हो सकता है।

इकाई 04– प्रमुख कृत, तद्धित एवं स्त्री प्रत्यय

इससे ऐतिहासिक समय में जाति, वर्ण और स्त्री की स्थिति को समझने में सहायता मिल सकती है।

इकाई 05 – संस्कृत साहित्य का इतिहास

इससे प्राचीनकाल के भारत की सामाजिक सांस्कृतिक व्यवस्था को समझा जा सकता है।

बीए पार्ट द्वितीय

द्वितीय प्रश्न पत्र

इकाई 01 – ऋक्सूक्त

इससे ऋग्वेदकालीन सामाजिक एवं धार्मिक व्यवस्थाओं को जान सकते हैं।

इकाई 02– ईषोपनिषद्

इससे भारतीय दर्शन को समझने में मदद मिलती है।

इकाई 03– गद्य साहित्य– शुकनासोपदेश

गद्य साहित्य के लेखन में रुचि रखने वालों के लिए यह आदर्श रूप गद्य है।

इकाई 04 – वाच्य एवं समास

संस्कृत भाषा को बोलने एवं उसमें लिखने की इच्छा रखने वालों के लिए यह बहुत लाभकारी है।

इकाई 05 – कारक प्रकरण

जैसा की इकाई 04 में बताया गया।

बीए पार्ट तृतीय

प्रथम प्रश्न पत्र

इकाई 01 – कुमारसम्भवम्

कालिदास साहित्य को समझने के साथ प्रौढ़ पद्य की रचना में यह बहुत सहायक है।

इकाई 02— किरातार्जुनीयम्

महाभारतकालीन राजनीति परिदृश्य का इससे ज्ञान प्राप्त होता है।

इकाई 03— दशकुमार चरितम्

इससे तत्कालीन राजनीतिक दुरभिसंधियों का पता चलता है। साथ ही गद्य लेखन शैली का यह उत्तम प्ररूप है। इससे लेखन में बहुत सहायता मिल सकती है।

इकाई 04 — याज्ञवल्क्यस्मृति — दाय भाग

भारतीय न्याय प्रणाली में संपत्ति के बंटवारे को समझने के लिए यह बहुत उपयोगी है।

इकाई 05 — निबंध रचना

संस्कृत लिखना और बोलना दोनों में इसका ज्ञान उपयोगी है।

बीए पार्ट तृतीय**द्वितीय प्रश्न पत्र****इकाई 01 — तर्कसंग्रह**

भारतीय न्याय एवं वैशेषिक दर्शन की आधारभूत

इकाई 02— भारतीय दर्शन के सिद्धान्त

इससे भारतीय छह आस्तिक एवं तीन नास्तिक दर्शनों की आधारभूत समझ प्राप्त होती है।

इकाई 03— नीतिषतकम्

पद्य लेखन के लिए यह मानदण्ड है। जीवनोपयोगी सूत्रों के अतिरिक्त यह पद्यलेखन में भी बहुत सहायक है।

इकाई 04 — भगवद्गीता (अध्याय 02 एवं 03)

भारतीय मनीषा के इस महान ग्रन्थ के इन अध्यायों में मनुष्य की स्थितिप्रज्ञता बतायी गयी है, जो मनुष्य के जीवन का वास्तविक उद्देश्य है।

इकाई 05 — तिङन्त प्रकरण

संस्कृत भाषा में शुद्ध लेखन के लिए इसका अध्ययन होना बहुत आवश्यक है। इसे हर छात्र को जानना चाहिए।

Sociology**Programme Outcomes**

As College Level Discipline Sociology is Much better Subject for Youths. Personality Development, Behavior Development Such as a Good Part of Social Citizens.

एक आदर्श विषय के साथ समाजशास्त्र विषय स्नातक स्तर के विद्यार्थियों के लिए उनके व्यक्तित्व निर्माण के साथ जुड़ता है साथ ही उनकी व्यवहारिक समझ को भी विकसित करता है। एक रोजगार परक विषय होने के कारण यह युवाओं की बेरोजगारी की समस्या का समाधान भी करता है।

स्नातक स्तर पर इस विषय के पाठ्यक्रम को इस तरह निर्मित किया गया है कि विद्यार्थी जब इस विषय के पाठ्यक्रम का पूर्ण अध्ययन कर लेता है तो वह समाज का सामाजिक नागरिक होने के साथ-साथ समाज में अपनी भूमिकाओं के प्रति भी जागरूक हो जाता है वह किसी भी प्रकार की विघटनकारी गतिविधियों से भी दूरी बनाये रखता है तथा विपथगामी व्यवहार को न तो अपनाता है और न हीं उसको स्वीकार करता है।

Course Outcome**B.A. Part I****Paper I Principles of Sociology**

1. Understand the Discipline of Sociology and Society
2. Understand the Emergence of Sociology as a Discipline
3. Describe the Basic Concepts of Sociology

Paper II Social Anthropology

1. Understand the Discipline of Social Anthropology
2. Understand the Emergence of Social Anthropology as a Discipline
3. Describe the Basic Concepts of Social Anthropology

B.A. Part II**Paper I Research Methodology**

1. Describe the Steps of Scientific Social Research
2. Understand the Different Research Designs
3. Understand Data collection tools and data Analysis methods

Paper II Social Problems in contemporary India

1. Describe Social Problems in India
2. Understand the Different Aspects of crime
3. Understand Major Social Problems in Contemporary in India

B.A. Part III**Paper I Social Thinkers**

1. Explain Classical Thinkers in Western Sociology and Indian Sociology.

2. Understand the Different Thought.
3. Critically Analysis the Work of Social Thinkers

Paper II Indian Society

1. Explain Indian Society and Culture
2. Understand the Different Components in Indian society
3. Understand Indian Demographic profile

Science Faculty

Botany

PROGRAM OUTCOMES

By the end of B.Sc. program in Botany, a student will:

1. Acquire basic knowledge of various branches of Botany
2. Inculcate interest and love of nature with its myriad life forms
3. Acquire basic skills in the observation and study of nature
4. Be exposed to the diversity among life forms and understand the unity behind diversity
5. Be aware of the ecological and evolutionary significance of the various life forms in the environment
6. Learn the different biological techniques.
7. Develop a scientific attitude which make her open minded, critical and curious
8. Develop ability for the application of the acquired knowledge in life and become self-reliant and self sufficient
9. Develop an ability to work on their own and to make them fit for the society
10. Acquire awareness of the conservation of the biosphere.
11. Develop skill in practical work, experiments, equipments and laboratory use along with collection and interpretation of biological materials and data
12. Acquire the ability to engage in independent and self-learning.
13. Be aware of natural resources and environment and the importance of conserving it.
14. Be able to communicate effectively their views and ideas on different issues related to botany
15. Be equipped to use computers in data acquisition and processing and use available software as a tool in data analysis.
16. Appreciate and apply ethical principles to biological science research and studies
17. Successfully pursue their career objectives in advanced education, professional courses, scientific career, teaching career in the school systems or related career following graduation.

PROGRAMME SPECIFIC OUTCOMES

The graduate of this programme will be able to:

1. Know the importance and scope of the discipline
2. Acquire a firm foundation in every aspect of Botany
3. Have an understanding of the broad spectrum of modern trends in Botany
4. Do lifelong learning due to attention drawn to the world of plants and introduction to the methodology of systematic academic enquiry
5. Scientifically identify and list out plants in their locality
6. Identify the role of different plants and their mode of survival in the environment
7. Develop skills to cultivate the economically beneficial plants and thus open opportunity for self-employment
8. Develop love and respect for nature
9. Analyze the impact of deforestation on environment

10. Explain the role and impact of different environmental conservation programme
11. Become an ambassador of sustainable development of our country
12. Understand the importance of modern branches of science like Biotechnology for the economic benefits of agriculture
13. Use tools of information technology for all activities related to Botany

B.Sc. Part I

BOTANY

PAPER I – ALGAE, LICHENS AND BRYOPHYTES

- **Unit 1:** This unit is helpful to students for understanding about the general aspect of algae, their thallus structure, habitat, etc and by this unit students can know how to classify or identify different types of algae.
- **Unit 2:** The second unit is helpful for students to understand the members of chlorophyta, charophyta and xanthophyta in detail and about classes of algae.
- **Unit 3:** This third unit about the detail of red and brown algae also covers different economic values of algae, which is very important for humans because this student can get its value. This also tells students about an important ecological component known as lichen, about its ecological importance and other values
- **Unit 4:** This unit told students about the general aspect of bryophytes as well as the details of Riccia and marchantia.
- **Unit 5:** This last unit deals with detail of anthoceros and Sphagnum as well as it tells students about the economic importance of bryophytes in different aspects, by which can be benefited.

Paper II: MYCOLOGY AND PLANT PATHOLOGY

- As food, Agaricus bisporus yeast is an important source of vitamin B and D.
- As medicines, Penicillin.
- Fungi in industry, baking industry and cheese industry.
- Fungi is used in enzyme production.
- Fungi's very important use is in genetics research. Neurospora crassa – very good material to study DNA synthesis.

Paper III: Pteridophyta, gymnosperm and paleobotany

- **1.** The geological time scale is an important tool used to portray the history of earth. a standard time line is used to describe the age of the rocks and fossils and the events that formed them we have come to know about the evolutionary trends that helps use in further research work.
- **2.** This helps us to understand the vegetative and reproductive morphology of certain pteridophyte which will help in research work.
- This provides us tremendous knowledge about the life cycle of some pteridophyte and about heterosory and evolutionary trends in pteridophytes.
- We have come to know about diversity evolution and economic importance of gymnosperm.
- This explains the life cycle of certain gymnosperm and helps us to know about their economic importance.

B.Sc. Part I Practicals

- The study of internal structure of certain algae is well understood. We also come to know about the economic importance of algae, lichens are well understood.
- The life cycle of various fungi are well explained. We get a detailed knowledge about various plant diseases caused by fungi, bacteria and virus.
- The study of Bryophytes helps us to understand their thallus structure which is beneficial in research studies.
- The internal structure of stem, leaf, sporocarp, cone of certain Pteridophytes helps us to understand the range of stellar system and reproductive organs.
- A detailed study of gymnosperms helps us to know about their vegetative and reproductive structures that help in research.

BSC PART -II

PAPER -I (Taxonomy and embryology of angiosperms):

- Unit 1: This unit gives insight about herbarium which is collection of preserved plants. This unit throws light on nomenclature of angiosperms and various system of classification
- Unit 2 & 3: These units explain various families their vegetative, floral characteristics and their economic importance.
- Unit 4 & 5: angiosperms. First Pollen falls on flowers stigma sperm cell and egg cell join to form a ovule. Formation of embryo sac endosperm and seed. This unit explain experimental embryology which includes culture of anther and embryo

PAPER -II -PLANT ANATOMY AND EMBRYOLOGY OF ANGIOSPERMS

- Unit 1-study about plant meristems helps us to students the structure different types of tissue in plants
- Unit 2- study of plant internal structure of roots, stems and anatomy of plants allows a student to conceptually integrate organismal structure and function
- Unit 3-study of anatomy and different types of growth patterns helps to reveal the relationships between structure, function, taxonomy, ecology etc.
- Unit 4-study of economic botany helps students to understand the economic productivity because it is involved study of cereal crops and ideal growing technique this is also important to environmental protection
- Unit 5-due to study of medicinal plants and other commercially important plants helps students to student use this knowledge to apply in daily life can be utilized this knowledge for commercial production also

Paper III -Cytogenetics, Plant Breeding, Evolution and Bio Statistics

- This unit helps to understand about cell which is structural and functional unit of life. Cellular components work together to carry out life functions and enable organisms to meet their basic needs.
- This unit gave insight about Mendel 's principle of inheritance and transmission of genetic traits present on chromosomes.
- This unit is useful for students to understand about D.N.A, R.N.A and Genes that has all the instructions that a living organism need to grow, reproduce and function.
- Plant breeding is a novel branch of botany in which students ensure food security by developing varieties which are higher yielding, disease resistance and adapted to different environment.
- This unit deals with the method for collection of data, presentation of data' analysis of data and making decision on basis of such analysis.
- This includes evolution which explains students how modern living thing have descended from ancient life forms.

BSC PART -II- PRACTICAL

- Purpose of various practical exercise is the develop curiosity about that subject
- due to these different practical exercise students know about different aspects of plant sciences
- critically evaluation of ideas and arguments by collection relevant information about the plants
- students will be able to apply the scientific method to questions in botany by formulating testable hypothesis.

B.SC. Part-III

Paper I- Ecology

Ecology enriches our world and is crucial for human wellbeing and prosperity. It provides new knowledge of the interdependence between people and nature that is vital for food production, maintaining clean air and water, and sustaining biodiversity in a changing climate.

- Students will be able to understand plant communities and ecological adaptation in plants.
- Learn about biodiversity and its conservation.
- Understand bio remediation, global warming and climate change.
- Study botanical regions of India and different vegetation types.

PAPER II: PLANT PHYSIOLOGY

- In this unit, various rules of osmosis are explained, and this unit told about water absorption, water potential and transpiration, as well as different types of ingredients required for plants.
- The second unit explains the various types of forests present in the hands and the common and unusual methods of photosynthesis, as well as the various influencing cars of the publication.
- Third unit deals with whole procedure of respiration and factor affecting respiration and also told about fat metabolism.

- This unit told about few important aspects of plant physiology such as plant growth hormones, dormancy, photoperiodism and vernalisation.
- This last unit deals with enzymology and techniques as chromatography, centrifuge, ph meter and spectrophotometer.

PAPER III: MOLECULAR BIOLOGY AND BIOTECHNOLOGY

- Molecular Biology & Biotechnology is the recent branch of life sciences and by this student will know the basic gene concept and how a DNA carries all information about the life.
- NIF genes play an important role in agriculture productivity. (How yield can be increased by the use of NIF genes)
- Genetic Engineering: With genetic Engineering students can understand the process of vaccination.
- It is an important tool in research that allow the function of specific genes to be studies. Drugs, vaccines & other products have been developed that aid food security increasing nutritional value and tolerance to environmental stresses.
- Students can design their organic farming by using natural insecticide (Bt-toxin).
- Students can prepare and use disease-free high-quality planting material and the rapid production of many uniform plants.
- Metabolites play an important role in immune system. Identification & analysis of these metabolites signal compounds and thus important for plant survival and reproductive fitness.

BSC PART -III - PRACTICAL

- Purpose of various practical exercise is the develop curiosity about that subject
- Due to these different practical exercise students know about different aspects of plant sciences specially in this class about plant physiology, ecology and biotechnology.
- Critically evaluation of ideas and arguments by collection relevant information about the plants by ecology.
- Students will be able to apply the scientific method to questions in botany by formulating testable hypothesis.
- Students learn about different concepts and experiments about physiology and biotechnology can be work as a skill development in students.
- Knowledge development in students about different concepts of plant sciences which may be useful in daily life.

Chemistry

B. Sc. Chemistry (Biology and Maths Group)

Program Outcome

The Program outcome-based curriculum framework (POCF) has been prepared to support designing uniform, advanced and effective Chemistry curriculum for undergraduate studies in Chemistry. Each subject content aims to present a curriculum framework, specifying the curriculum aims, learning targets and objectives.

This curriculum framework for the bachelor-level program in Chemistry is developed keeping in view the student centric learning pedagogy, which is entirely outcome-oriented and curiosity-driven.

Nature and extent of the B.Sc. Chemistry Programme:

Chemistry is referred to as the science that systematically studies the composition, properties, and reactivity of matter at atomic and molecular level. The scope of chemistry is very broad. The key areas of study of chemistry comprise Organic chemistry, Inorganic Chemistry and Physical Chemistry. In addition, employability of B.Sc. Chemistry graduate is given due importance such that their core competency in the subject matter, both theoretical and practical, is ensured.

Aims of Bachelor's degree programme in Chemistry:

The broad aims of bachelor's degree programme in Chemistry are:

(i) Broad and balance knowledge in chemistry in addition to understanding of key chemical concepts, principles and theories.

(ii) To develop students' ability and skill to acquire expertise over solving both theoretical and applied chemistry problems.

(iii) To provide knowledge and skill to the students thus enabling them to undertake further studies in chemistry in related areas or multidisciplinary areas that can be helpful for self-employment /entrepreneurship.

(iv) To provide the latest subject matter, both theoretical as well as practical, such a way to foster their core competency and discovery learning.

(v) To enable the graduate prepare for national as well as international competitive examinations, especially UGC-CSIR NET and UPSC Civil Services Examination.

Learning Course Outcome

B.Sc. Part -I

Paper- I Inorganic Chemistry

On completion of this course, the learner shall be able to:

- Apply atomic theory and its evolution, predict quantum numbers.
- Explain periodic properties, physical and chemical characteristics, periodicity of properties.
- Characterize bonding between atoms, molecules, interaction and energetics, hybridization and shapes of atomic, molecular orbitals, bond parameters, bond- distances and energies.
- Apply the fundamental principles of s and p-block elements and chemistry of noble gases, their chemical bonding and general chemical reactivity in subsequent courses of chemistry.

Paper- II Organic Chemistry

On completion of this course, the learner shall be able to:

- Explain basics of organic molecules, structure, bonding, reactivity and reaction mechanisms, aromatic compounds and aromaticity, mechanism of aromatic reactions.
- Stereochemistry of organic molecules – conformation and configuration, asymmetric molecules and nomenclature.
- Mechanism of organic reactions (effect of nucleophile/leaving group, solvent), substitution vs. elimination.
- Understand preparation, properties, structure and applications of saturated hydrocarbons.

Paper- III Physical Chemistry

On completion of this course, the learner shall be able to:

- Analyze basic concepts of mathematics and computer application.
- Describe physical properties of each state of matter.
- Explain the concept of liquids and colloids.
- Determination of lattice parameters of given salt, computational and calculation techniques.
- Explain chemical kinetics and chemistry in everyday life.

B.Sc. Part-I Practical

On completion this course, the learner shall be able to:

- Understand the principles of working with lab equipment's, and ability to properly use them.
- Process purification of important compounds.
- Analyze, separate and identify anions and cations from various groups.
- Identify organic compounds, their melting points and boiling point determination by lab techniques.
- Determine the % composition of unknown solution by viscosity and surface tension methods.
- Understand basic safety symbols in chemistry lab

B.Sc. Part -II Paper

I Inorganic Chemistry

On completion of this course, the learner shall be able to:

- Acquire knowledge of characteristic of Lanthanides and Actinides, transition metal series with comparison
- Understand the properties of non -aqueous solutions.
- Explain theories of acids and bases, understanding coordination compounds, their structures and properties.
- Apply Chromatographic methods and preparation of chromatograms.
- Apply Werner's Theory and its experimental verification, demonstrate bonding theories including valence bond theory and molecular orbital theory.

Paper II Organic Chemistry

On completion of this course, the learner shall be able to:

- Explain spectroscopic methods, understand the structure of organic compounds using UV, Visible and IR spectral data.
- Describe name reactions, uses of various reagents and the mechanism of their action.
- Explain the structure, synthesis, uses and properties of different classes of organic compounds like phenols amines, arenes, and carboxylic acids.

Paper III Physical Chemistry

On completion of this course, the learner shall be able to:

- Apply basic laws of thermodynamics, and thermochemistry
- Explain partial molar quantities and its attributes.
- Understand basic introduction of photo chemistry.
- Understanding the concept of heat of reactions and use of equations in calculations of bond energy, enthalpy, etc.
- Understand the concept of phase rule.
- Use of thermochemical equations and thermodynamics for calculation of energy, chemical behaviour of solvent and solute, determination of transition temperature and heat of neutralisation.

B. Sc. Part-II Practical

On completion of this course, the learner shall be able to:

- Prepare standard solutions of various secondary standard salts.
- Calibrate lab equipment's like pipettes and burettes.
- Evaluate heat of neutralization.
- Determine transition temperature of some inorganic compounds
- Separate organic mixture containing two solid components by water and sodium carbonate methods.

B.Sc. Part -III

Paper I Inorganic Chemistry

On completion of this course, the learner shall be able to:

- Explain coordination compounds – its nomenclature, theories, d-orbital splitting in complexes, chelate.
- Apply crystal field theory on different geometries to correlate it with stability.
- Apply HSAB principle on stability of molecules.
- Elucidate structure and bonding of Inorganic polymers.
- Elaborate thermodynamic and kinetic stability of complexes, L-S coupling, describe bioinorganic molecules with special reference to Hemoglobin and Myoglobin, and understand toxicity of various metals and mechanism of metal-biological system interactions.
- Describe basic phenomenon of nuclear chemistry.

Paper II Organic Chemistry

On completion of this course, the learner shall be able to:

- Describe polynuclear hydrocarbons and their reactions.
- Analyze reaction mechanism of heterocyclic compounds, alkaloids and Terpenes
- Explain, classification, structure, reaction mechanism of synthetic drugs and dyes.
- Understand the structure, mechanism of reactions of selected heterocyclic compounds.
- Elucidate applications of heterocyclic compounds in pharmaceuticals/drugs and the mechanism of action's, structure of carbohydrate, amino acids, proteins and nucleic acids.

III Physical Chemistry

On completion this course, the learner shall be able to:

- Explain quantum mechanics and its uses.
- Analyze various types of spectroscopic methods to identify molecular structure.
- Understand the basics of chemical kinetics: determination of order, molecularity, and understanding theories of reaction rates, determination of rate of opposing/parallel/chain reactions with suitable examples, application of steady state kinetics, Steady-state approximation.
- Demonstrate the applications of IR, Microwave and Raman spectra explain basic principles of nuclear chemistry and understand various types of solutions, their properties and numerical related to kinetics.

B. Sc. Part-III Practical

On completion of this course, the learner shall be able to:

- Synthesize various transition metal complexes.
- Handle instruments like colorimeter and potentiometer and conductometer.
- Understand concept of chromatography (Paper Chromatography) by separation of organic compounds.

- Analyze adulteration of certain food stuffs by simple chemical methods.
- Lab/Instrumentation techniques used for analysing reaction mechanisms, advanced soft-wares/Models used for predicting stereochemistry/design and synthesis/study of energy minimization of organic molecules.

Physics

COURSE OUTCOME

B.Sc. Part- I

PAPER-I FRAME OF REFERENCE, MECHANICS AND OSCILLATIONS

After completing the Course student will be able to –

- Define Frame of reference and can differentiate between inertial and non-inertial frame of reference.
- Apply Galilean transformation and fictitious force.
- Analyze and demonstrate the Coriolis force and Centrifugal force in rotating frame of reference.
- Describe Michelson Morley experiment and its failure to prove the existence of ether.
- Define the postulates of special theory of relativity
- Deduce and apply the Lorentz transformation
- Explain and demonstrate the length contraction and time dilations using space-time model
- Apply velocity transformation and can deduce the formula of variation of mass with velocity.
- Explain and describe the 4D space and vector.
- Define motion under central force.
- Describe Kepler's law and can relate it with conservation laws
- Analyze the gravitational laws using central force motion and relate the concept of field.
- Derive the Gauss and Poisson equations
- Explain the concepts of centre of mass
- Elaborate the motion of rockets using the learnt concepts
- Apply the momentum and energy conservation in elastic and non-elastic collisions.
- Define rigid body motion, rotational motion and moment of inertia.
- Explain the co-efficient of moment of inertia in anisotropic body
- Derive and apply the Euler equations
- Define the potential well and periodic oscillations
- Analyze the differential equations of free and damped oscillations
- Apply the concepts of oscillation in various conditions –spring mass, pendulum, LC circuit etc.
- Apply the concepts of superposition in two SHMs.
- Draw and demonstrate the Lissajous figure.
- Apply and analyze the concepts of damped oscillations

PAPER-II- MATHEMATICAL BACKGROUND, PROPERTIES OF MATTER AND ELECTROMAGNETIC WAVES

After completing the course student will be able to -

- Apply the concepts of dot product and cross product up to three vectors.
- Describe the geometrical meaning of gradient, curl and divergence.
- Conversion between surface and volume integral.
- Define curvilinear coordinates
- Derive and apply stokes and green theorem.
- Define Elasticity.
- Describe the Young modulus, bulk modulus and modulus of rigidity.
- Deduce relation between different elastic constant
- Apply the concepts in bending of beam, Cantilever, etc.
- Define Elasticity.
- Describe the Young modulus, bulk modulus and modulus of rigidity.
- Deduce relation between different elastic constant
- Apply the concepts in bending of beam, Cantilever, etc.

- Define Electromagnetic induction
- Explain Faraday's law and its different forms
- Apply the concepts of Self and Mutual Inductance.
- Describe the Maxwell's displacement current.
- Describe the plane electromagnetic waves
- Analyze wave equations for different polarized waves.
- Deduce and apply the boundary conditions for B, E, H and D.
- Explain and demonstrate the Total internal reflection

PAPER-III- ELECTROSTATICS, ELECTRICITY & MAGNETISM

After completing the course student will be able to -

- Define Coulomb's law and its vector form.
- Describe the concepts of multipoles
- Explain the concepts of field and potential.
- Calculate the torque on dipole, electrostatic energy of sphere etc.
- Define dielectrics, capacitor and dielectric constants
- Define Polarization and polarization vector Atomic and molecular polarisability, Displacement vector D,
- Explain molecular interpretation of Clausius Mosotti equation
- Define Steady current, Current density J,
- Deduce and explain the physical significance of continuity equation
- Analyze the charging and discharging of condenser through resistance,
- Apply the charging-discharging concepts for determination of high resistance by leakage method.
- Analyze the rise and decay of current in LR and CR circuits,
- Define Decay constant
- Analyze transients in LCR circuits, AC circuits,
- Apply complex number and their applications in solving AC circuit
- Define and calculate force on moving charge
- Define magnetic field,
- Apply concepts of force and torque in different cases.
- Define Biot and Savart's law
- Apply Bio-savart laws in different cases.
- Apply the Electric force and magnetic force to find the path of charge particles moving in respective fields
- Apply the concept to explain the functioning of CRO.
- Analyze mass spectrograph, velocity selector using concepts taught in this unit.

B.Sc. Part -II

Paper-I STATISTICAL PHYSICS AND THERMODYNAMICS

After completing the course student will be able to -

- Demonstrate the phase space for different STATISTICAL SYSTEM.
- Define micro and macro states
- Discuss the statistical basis of thermodynamics
- Define Probability and thermodynamic probability,
- Explain the principle of equal a priori probabilities,
- Define Constraints, accessible and inaccessible states,
- Apply concepts in different systems.
- Create link between micro and macroscopic physics
- Relate Probability and entropy
- Interpret statistical second law of thermodynamics.
- State and apply Boltzmann canonical distribution law

- Deduce law of Equipartition of energy.
- Transits the concepts to quantum statistics
- Apply the concepts to 1-D and 3-D harmonic oscillator
- Analyze and compare M.B., Bose-Einstein, and Fermi-Dirac statistics
- Define the laws of thermodynamics
- Calculate the work done by and on the system,
- Differentiate state and path function.
- Define and differentiate reversible and irreversible changes
- Explain Carnot cycle and its efficiency
- Apply Carnot theorem to derive the second law of thermodynamics
- Elaborate Different versions of the second law
- Define the thermodynamic scale of temperature; its identity with the perfect gas scale.
- Define Third law of thermodynamics
- Define Thermodynamic variables;
- Differentiate extensive and intensive variable,
- Derive Maxwell's general relations,
- Apply Maxwell's equations in various cases.
- Define Stefan-Boltzmann law of radiation.
- Analyze Spectral distribution of blackbody radiation.
- Define and explain Wien's displacement law, Rayleigh-Jean's law,
- Explain the concept of ultraviolet catastrophe
- Define Planck's quantum postulates,
- Interpret the behaviour of specific heats of gases and solids at different temperature

Paper- II- WAVES, ACOUSTICS AND KINETIC THEORY OF GASES

After completing the course student will be able to -

- Define Ideal Gas: Kinetic model,
- Derive of Boyle's law;
- Define the temperature at molecular level,
- Estimate of r.m.s speeds of molecules.
- Explain Brownian motion, estimate of the Avogadro number.
- Define Equipartition of energy,
- Define and calculate the specific heat of gas,
- Analyze adiabatic expansion of an ideal gas,
- Apply the concepts to atmospheric physics.
- Explain Transport phenomena in gases
- Explain the concept of real gas
- Differentiate the ideal and real gas
- Plot P-V curve and analyze it
- Define and explain the Joule Thomson effect
- Explain the process of Liquification of gases
- State the Maxwell postulates
- Deduce the Maxwell velocity distribution equation
- Plot graphs for distribution
- Apply the distribution laws for statistical analysis
- Explain and apply the concept of acoustics of buildings
- Define the waves
- Derive the equation of wave

- Apply the wave equation to find the velocity of wave
- Explain the gravity waves
- Apply the superposition principle to explain the standing waves
- Explain the formation of Chaldani's figures.
- Explain the application of ultrasonic waves.
- Explain the working of human ears
- Analyze the sound loudness using Bel and decibel units.
- Analyze the sound of different musical instrument and explain the formation of music from them
- Measure the frequency and velocity of wave by different experiments
- Apply the concepts to explain working of SONAR and RADAR.

Paper-III- OPTICS

After completing the course student will be able to -

- Define and apply the Fermat principle
- Explain and apply the concepts of image formation by multiple and thick lens systems
- Explain the different aberration in image formation
- Apply different techniques to remove the aberrations
- Define interference in waves
- Create the condition for interference in light
- Analyze the interference in different optical systems
- Define the Fresnel and Fraunhofer diffraction and distinguish them.
- Apply the Fresnel diffraction concepts to explain the light's behaviour in different conditions
- Analyze the gratings using Fraunhofer concepts
- Explain the different process at atomic level for light emission
- Explain the conditions of lasing action
- Elaborate the different laser systems
- Explain the holography and its applications in different fields

B.Sc. Part III

PAPER -I- Quantum Mechanics, Atomic and Molecular Physics

After Completing course student will be able to

- Define Blackbody
- Describe Blackbody spectrum
- Explain Plank's Radiation Law, Photoelectric effect and Compton effect
- Analyse and briefly explain Diffraction and interference of particles, Origin of Quantum Define Uncertainly principle and justify it.
- Apply the concept of uncertainty in various cases such as diffraction at a single slit, particle in a box and its applications (i) Nonexistence of electron in nucleus, (ii) Ground state energy of H-atom (iii) Ground slate energy of harmonic oscillator.
- Define and analyse Schrodinger equation- Time dependent and lime independent form.
- Explain significance of the wave function & its interpretation.
- Define probability current density and gives its physical significance
- Apply operators in quantum mechanics,
- Define fundamental postulates of quantum mechanics, eigen function and eigen value, degeneracy. orthogonality of eigen functions' commutation relations.
- Explain Ehrenfest theorem, concept of group and phase velocities, wave packet.
- Apply time independent Schrodinger equation and stationary state solution.
- Solve the problems like -particle in 1-D box and 3-D box
- Potential step and rectangular potential barrier. Calculation of reflection and transmission coefficient.
- Apply barrier problem for alpha decay (tunnel effect),
- Solve square well potential problem

- Apply the Schrodinger equation to 1-D harmonic oscillator
- Explain the hydrogen atom on the basis of Schrodinger equation.
- Explain the Hydrogen spectrum
- Analyze normal spectral lines, fine and hyperfine line by using spin of electron, vibration of bonding rotation of molecules
- Apply Raman Effect to find the molecular structure

Paper-II- Nuclear and Solid-State Physics

After Completing course student will be able to

- Explain the results of Rutherford theory of alpha particle scattering,
- Define and analyze the properties of nucleus- Quadrupole moment (Q.M)
- Determine the shape of nucleus using O.M.
- Explain and calculate the nuclear spin.
- Analyze the nuclear potential and elaborate properties of nuclear forces.
- Apply semiempirical mass formula
- Explain nuclear fission and fusion using nuclear liquid drop model
- Apply nuclear fission concepts to explain the nuclear reactor
- Explain the formation of energy in sun using nuclear fission
- Analyze the concepts to explain the working of particle detector and counter.
- Define lattice, Bravais crystal and miller indices
- Apply X-ray diffraction method to find the crystal structure
- Use the concept of phonon to explain the specific heat of solid
- Explain the conductivity of solid by understanding crystal structure and different theorems

Paper-III- Electronics and Solid-State Devices

After Completing course student will be able to

- Define Norton, thevenin etc. theorem
- Apply the theorem to analyze the circuits
- Explain the mechanism of formation of conductor and semiconductor
- Define semiconductor, holes
- Explain working of P-N junction
- Explain working of different semiconducting devices
- Apply semiconductor for rectification process
- Explain working of Transistor
- Elaborate the concepts to explain the different biasing of transistor
- Explain the Amplifier
- Apply the Amplifier in different mathematical process
- Define the Feedback in amplifiers
- Explain the oscillators on the basis of feedback in amplifier

Mathematics

B.Sc. (Mathematics)

Programme Outcome

- Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
- A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved.
- Ability to analyze a problem, identify and which may be appropriate to its solution.
- Introduction to various courses like group theory, matrix theory, calculus and vector calculus, geometry (2D &3D), N.A, OT, Analysis and mechanics.
- Enhancing students' overall development and xz solving skills, creative talent and power of communication necessary for various kinds of employment.

- Ability to pursue advanced studies and research in pure and applied mathematical science.

Programme Specific Outcome of B.Sc. Mathematics

- Think in a critical manner.
- Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
- Formulate and develop mathematical arguments in a logical manner.
- Acquire good knowledge and understanding in advanced areas of chosen by the student from the given courses.
- Understand, formulate and use quantitative models arising in social science, Business and other contexts.

Course Outcomes

B.Sc.– Part I

9137- Paper-I - Algebra

After Completing course student will be able to

- Learn to solve system of linear equation and its application.
- Learn to solve matrices, determinate, inverse matrices and rank of matrices.
- Learn to find roots of cubic, biquadratic and Cardan and Ferreris method.
- Learn to find graphs, roots and primes integer.
- Explain the significations of the notation of a group, subgroup, normal subgroup, and homomorphism.
- Acquire the notation of permutation and operation of them.

9137- Paper- II- Calculus

After Completing course student will be able to

- Describe the concepts and applications of derivative and higher order derivatives.
- Develop competency in applying the idea of partial derivatives.
- Gain Knowledge of fundamental basic concepts of differentiation and integration.
- Introduction to curve, pedal equation and maximum or minimum.
- Introduction beta and gamma function, Qudarvolume, double and triple integral.
- Acquire the concept of asymptotes and envelopes.

9137- Paper- III- Vector Calculus

After Completing course student will be able to

- Acquire the basic knowledge of vector differentiation and vector integration.
- Evaluate line, surface, double and triple integral and use these integrals to verify the seminal integral theorems (Green's theorem in the plane, Gauss' divergence theorem and Stokes' theorem)
- Compute the curl, gradient and the divergence of vector.
- Use Green's theorem to evaluate line integral along simple closed contours on the plane. Apply Stokes' theorem to compute line integrals along the boundary of a surface
- Introduction to analytical geometry of 2 & 3 dimensional. Finding equation in various form sphere, cones, cylinder & central coincides and its applications.
- Explain the ideas of conics and their various applications. Find the polar equation a line, circle, tangent and normal of conic.

B.Sc.– Part II

9237- Paper- I- Higher Calculus

After Completing course student will be able to

- Gain Knowledge of fundamental concepts of real numbers.
- Verify the value of the limit of a function at a point using the definition of the limit ($\epsilon - \delta$).
- Introduction to sequence and series.
- Learn to check function is continuous understand the consequences of the intermediate value theorem for continuous functions.
- Student will be to understand differentiation and fundamental theorem in differentiation and various rules.

- Geometrical representation and problem solving on MVT, Rolle's, Lagrange's, Taylor's and Maclaurin's theorem and its reminder.

9237- Paper- II- Differential Equation

After Completing course student will be able to

- Understand the order, degree and various standard forms of differential equations.
- Determine solutions to first order linear differential equations and solutions to first order exact differential equations.
- Determine solutions to second order linear homogeneous differential equations with constant coefficient.
- Obtain power series solutions of differential equations and identify and obtain the solution of Clairaut's equation.
- Familiarize with the various techniques of finding the solution of the differential equation $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$
- Acquire the idea of Monge's method for solving the second order linear partial differential equations.

9237- Paper- III- Mechanics

After Completing course student will be able to

- Explain basic idea of equilibrium condition, type of forces.
- Explain the geometry of the motion of particle in plane curve, i.e., position, velocity, and acceleration and how those quantities are related through calculus.
- Learn Newton's laws of motion and examine their application to wide variety of problems.
- Learn the basic concept of composition and resolution of forces and friction.
- Understand and visualize the real physical problem in terms of mathematics.
- Learn one dimensional (SHM), multi-dimensional and constrained motion.

B.Sc.– Part III

9337- Paper – I - Advanced Algebra

After Completing course student will be able to

- define ring and subrings.
- Study of ideals and concept related to ideal.
- Study of various integral domains in ring.
- Introduction to field.
- Introduction to vector space and subspace.
- Use computational techniques and algebraic skills essential for the study of systems of Linear equations, matrix algebra, vector spaces, eigenvalues and eigenvectors, Orthogonally and Diagonalization.

9337- Paper - II – Analysis

- Compute sums, products, quotients, conjugate, modulus, and argument of complex numbers · Define and analyze limits and continuity for complex functions as well as consequences of continuity ·
- Conceive the concepts of analytic functions and will be familiar with the elementary complex functions and their properties · Determine whether a given function is differentiable, and if so, find its derivative. Applies the theory into application of the power series expansion of analytic functions ·
- Understand the basic methods of complex integration and its application in contour integration. · Analyze sequences and series of analytic functions and types of convergence, · Evaluate complex contour integrals directly and by the fundamental theorem, apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula.
- Able to understand the Euclidean distance function on \mathbb{R}^n and appreciate its properties, and state and use the Triangle and
- Explain the definition of continuity for functions from \mathbb{R}^n to \mathbb{R}^m and determine whether a given function from \mathbb{R}^n to \mathbb{R}^m is continuous
- Distinguish between open and closed balls in a metric space and determine whether a given sequence in a metric space converges.

9337- Paper – III- Numerical Analysis & Optimization Techniques

- Develop linear programming (LP) models for shortest path, maximum flow, minimal spanning tree, critical path, minimum cost flow, and transshipment problems.
- Understand the mathematical tools that are needed to solve optimization problems.

- Formulate pure, mixed, and binary integer programming models.
- Formulate the nonlinear programming models.
- Use some solution methods for solving the nonlinear optimization problems.
- Examine the appropriate numerical differentiation and integration methods to solve problem.

Zoology

BSC. Zoology Program Outcomes

The department of zoology MS College Bikaner offers Zoology as a course subject for undergraduate students

PO1. Students gain knowledge and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms

PO2. Analyze complex interactions among the various animals of different phyla their distribution and their relationship with the environment.

Program Specific Outcomes

PO1. Aware students about knowledge and skills in the fundamentals and systematics of Animal Kingdom.

PO2. Gain knowledge of anatomical structure and various metabolic functions of organs.

PO3. Understand various physiological processes at molecular level of animals from different phyla

PO4. Awareness about environment and its conservation processes, pollution control and its importance.

PO5. Gain knowledge for protection of vulnerable and endangered species.

PO6. Understand about various concepts of genetics and its importance in social well being

PO7. Information and skill advanced biological techniques for experimental purpose

PO8. Apply the knowledge and understanding of zoology to one's own and social life

PO9. Gain knowledge of communicable and non-communicable diseases to improve personal and public health

PO10. Develop empathy and love towards the animals.

Course Outcome

B Sc Part I Paper I- Taxonomy, Diversity and Functional Anatomy of Lower Non-Chordata

CO1. Ability to love and understand the fascinating world of Invertebrates

CO2. Get a concrete idea of the evolution, hierarchy and classification of Invertebrate phyla

CO3. Understand the basics of systematics by learning the diagnostic and general characters of various groups

CO4. Getting an overview of typical example in each phyla

CO5. They will acquire knowledge about acoelomate and pseudocoelomate parasites their lifecycles epidemiology, pathology, diagnosis, symptoms and treatment

B Sc Part I Paper II- Taxonomy, Diversity and Functional Anatomy of Higher Non-Chordata

CO1. Imparts knowledge regarding the various Invertebrate species and the regulatory processes to safe guard them

CO2. With the study of this paper students gain knowledge in the area of responses to systematic position, general organization and affinities of Annelida to Echinodermata

B Sc Part I Paper III- Cell Biology, Biochemistry and Microbiology

CO1. Students will understand structure, positions and functions of plasma membrane and all cellular organelles in details.

CO2. They will acquire knowledge about chromosomes and cell divisions, mitosis and meiosis

CO3. They will know how to measure and stain different cell types

CO4. Students will gain knowledge about Catabolism and Anabolism

CO5. Students will understand about various bacteria and viruses and diseases spread by them their diagnosis, symptoms and treatment

CO6. They will study about AIDS, SARS, secondary diseases, symptoms, diagnosis, treatment and prevention

CO7. They will also have elementary idea of cancer

B Sc Part I Practical

CO1. Dissection of different systems of Invertebrate animals are to be studied such as Prawn, Pila and Unio

CO2. Permanent slides are prepared from different organs to study the details of their structures prepared by students

- CO3. Prepared slides in this part to understand the structure and arrangement of different muscular regions
- CO4. Study of Invertebrate specimens identified and classified the specimens which are present in the departmental museum
- CO5. Detect carbohydrate, protein and fat in given food material using biochemical test
- CO6. Identify the phases of cell division
- CO7. They will come to know about cell membrane permeability

B Sc Part II Paper I- Chordata and Evolution

- CO1. Students will understand the classification, structure, function and biology of chordates of different taxonomic classes
- CO2. They will acquire knowledge about comparison of the following organ systems of vertebrates with special reference to evolutionary aspects Scoliodon, Rana, Uromastix, Columba, Oryctolagus. Study about integument, Alimentary canal, heart and evolution of aortic arches, respiratory system, urinogenital system
- CO3. Students will have knowledge of evolutionary thought by Lamarckism, Darwinism, Origin of Life, Evidences of organic evolution, Genetic basis of evolution, Hardy Wein Berg's Law, natural selection, isolation mechanism, variation, adaptation, with specific reference to flight adaptation, aquatic adaptation and desert adaptations
- CO4. They will have knowledge of geological time scale, fossils, dating of fossils, principle Zoo geographical regions of the earth and their mammalian fauna, extinct forms: Archaeopteryx, Dinosaurs, Evolution of horse

B Sc Part II Paper II- Mammalian Physiology and Immunology

- CO1. Students will know the physiology of digestion, respiration, circulation, excretion.
- CO2. Understand the functions of important physiological systems including the cardio, respiratory, renal, reproductive and metabolic systems
- CO3. Understand how these separate systems interact to yield integrated physiological responses
- CO4. They will gain knowledge about nerve impulse and muscle contraction
- CO5. Imparts in depth knowledge of tissues, cells, molecules involved in host defense mechanisms
- CO6. Understanding of types of immunity
- CO7. Interaction of antigens antibodies complements other immune components
- CO8. Understanding the immune mechanisms in disease control, vaccination, process of immune interactions

B Sc Part II Paper III- Developmental Biology

Upon completion of this course the student will be able to:

- CO1. Discuss basic concepts and develop knowledge on major developing processes
- CO2. Explain the development of different organs and organ systems
- CO3. Analyze the mechanisms regulating developing processes
- CO4. Evaluate the different technologies adopted in assisted reproduction
- CO5. Apply the concepts in new area of developmental biology

B Sc Part II Practical

- CO1. Dissection of different systems of Scoliodon
- CO2. Permanent slides are prepared from different organs to study the details of their structures prepared by students
- CO3. Prepared slides in this part to understand the structure and arrangement of different muscular regions
- CO4. Count total leucocytes and RBC from blood samples
- CO5. Prepare temporary slide of various stages of chick embryo to identify different stages
- CO6. Identify adaptations in animals
- CO7. Explain the stages of human evolution
- CO8. Explain the evidences of evolution
- CO9. Estimation of Haematocrit value, total hemoglobin, blood coagulation time experiment, blood urea estimation, estimation of blood glucose level.

B Sc Part III Paper I- Mammalian Neuroendocrinology and Behavior

- CO1. This paper gives idea about the glands which work inside the body and secretes a chemical called

hormone. How it is classified, how it works and the regulation of these hormones are discussed here. It gives clear picture of its functions

CO2. Apply the knowledge of endocrinology to understand hormone related disorders

CO3. Explain the secretion and transportation of hormones to maintain homeostasis

CO4. Students will have knowledge of ovary and placenta, ovarian cycles and their neuroendocrine control, endocrinology of ovulation, implantation, parturition and lactation. Testis and testicular cycles and their hormonal control

CO5. Pheromones and their role in reproductive function and behavior

CO6. Understand the concepts of Ethology, methods of studying behavior and a brief idea about pheromones, biological clocks, orientation

CO7. Understand the concept of social behavior and social organization of Black Buck and rhesus Monkey. Social communications among animals.

CO8. Migration of fishes and cryo preservations

B Sc Part III Paper II- Genetics and Biotechnology

CO1. They will gain knowledge of Mendelian principles, interaction of genes, linkage and crossing over, human genetics, blood grouping

CO2. On completion of this course students are able to understand about the genetic material (Nucleic acids) and DNA replication

CO3. Understand about various types of RNA and process of Transcription and Translation

CO4. Understand the genetic code, Mendelism and multiple Allelism

CO5. Understand the concept of gene and gene interaction and sex-linked inheritance

CO6. Understand the terms Mutation, Eugenics, Gene Regulation, Cytoplasmic inheritance

CO7. They will come to know elementary idea about genetic engineering, gene cloning and recombinant DNA technology

CO8. Students will learn microbes in Medicines, Antibiotics, Vaccine, Antibodies, Antigens

CO9. They will learn about environmental biotechnology: use of microorganisms in metal and petroleum recovery, pest control, waste treatment, processing of industrial waste

CO10. Use of food and drink biotechnology

CO11. Monoclonal antibodies and their applications

B Sc Part III Paper III- Animal Ecology and Biostatistics

CO1. The students will be able to identify and critically evaluate their own belief, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population

CO2. The learner will be able to link the intricacies of food chain and food web and link it with human life for its betterment and for non-exploitation of the biotic and abiotic components

CO3. To study population, community ecosystem, zoo geographical distribution of animals, wildlife conservation, pollution, etc.

CO4. Students will have knowledge of fresh water lentic habitat, lotic habitat, deep sea fauna, marine habitat, estuarine habitat; their fauna and adaptations

CO5. They will learn about concept of ecosystem. Trophic levels – food chain, food web and energy flow in an ecosystem

CO6. Biostatistics teaches them to use the best data analysis methods in their research projects

CO7. Students will gain knowledge about statistical methods of measure of central tendencies, probability

CO8. Learns the problem-solving methods

B Sc Part III Practical

CO1. Study of museum specimen, identified and classified the specimen of phylum Amphibia, Reptiles, Birds and Mammals

CO2. They gain knowledge from the prepared slides, the structure and arrangement of different cells in endocrine glands

CO3. Measurement of various parameters of water such as pH, CO₂, O₂, Cl, salinity, alkalinity and acidity

CO4. They will learn about antennal grooming in cockroach, study of photo tactic response of Tribolium,

response of Paramecium towards stimulus

CO5. They will understand about construction of frequency tables, histogram, polygons, pie charts, mean, median, mode, t-test and Chi square test

Commerce Faculty
ABST
B.COM [ABST]
PROGRAM OUTCOME

1: After completing three years for Bachelors in Commerce (B.Com.) program, students would gain a thorough grounding in the fundamentals of Commerce and Finance. Especially for the students it will give the scope for self-employment as well as for getting good jobs of the competitive market.

2: The commerce and finance focused curriculum offers a number of specializations and practical exposures which would equip the student to face the modern-day challenges in commerce and business.

3: The all-inclusive outlook of the course offers a number of value-based and job oriented courses ensures that students are trained into up-to-date. In advanced accounting courses beyond the introductory level, affective development will also progress to the valuing and organization levels.

4: Learners will be able to prove proficiency with the ability to engage in competitive exams like CA, CS, ICWA and other courses.

Program Specific Outcome / Course Outcome:

B.Com Part I

Paper-I-

1. **Financial Accounting:** After completing this course student will be able to have an insight into the basics of Accounting Concepts and Principles to have the foot hold in Accounts. Preparing accounting information for planning and control and for the evaluation of finance. Students will be familiarized with the concept of Branch account and its system and to understand the Scope of departmental accounting. student will be able to proper accounts of any organization.

Paper- II-

2. **Business Statistics:** After completing this course students will be able to acquire new skills on the application of statistical tools and techniques in Business decision-making. Student will be familiarizing with the concept of statistics. This course will support student to analysis statistical research.

B.Com Part II

Paper-I-

3. **Income Tax (B.COM II):** Students will be able to demonstrate progressive learning of various tax issues and tax forms related to individuals. By this student will learn basic concepts in Income-Tax. To help them to apply the provisions and complete incomes under various heads. It helps to build an idea about income of an individual and its tax. It helps students to understand provisions of tax for individual, firm and HUF.

Paper- II-

4. **Cost Accounting (B.COM II):** It will make students familiarize with the basic concepts of cost and various methods and techniques of costing. Aimed to familiarize the concept of cost accounting. Helps to gather knowledge on preparation of cost sheet in its practical point of view. it facilitates the idea and meaning of material control with pricing methods. It will support student to calculate the cost of any project.

B.Com Part III

Paper-I-

5. **Corporate Accounting (B.COM III):** After completing this course students will be able to understand and appreciate the Provisions of the companies act 2013. It will give them an exposure to calculate the value of Goodwill and shares. Students can get an idea about internal reconstruction.

Paper- II-

6. **Taxation (GST And Audit) (B.COM III):** The learning Goods and Services Tax (GST) enables the commerce students and the business community to ease interaction with GST authorities. Especially for the students it will give the scope for self-employment as well as for getting good jobs of the competitive market. To enable the students to learn the concepts indirect tax and GST from the pre-GST period to post- GST period.

BM
Course outcome
Business Management
B.Com. Part-I

Paper-I Principles of management

Students completing this course will be able to:

- **Evaluate** the global content for taking managerial actions of planning, organizing, directing and controlling.
- **Assess** managerial practices and choices relative to ethical principles and standards.
- **Apply** their knowledge into management practices.
- **Specify** how the managerial functions can be executed in a variety of circumstances and with different type of people/employees.

Paper-II Business law

Students completing this course will be able to:

- **Define** various important terminologies of the different acts of Business Law like The Indian contract Act, The Sale of goods Act, Consumer Protection Act etc.
- **Apply** the knowledge at the time of making an agreement or contract.
- **Demonstrate** knowledge of basic business or commercial law.
- **Identify** the contract remedies and transactions involving the sale of goods.

B.Com. Part -II
Paper-I- Company Law

Students completing this course will be able to:

- **Describe** the company and its types, management and various provisions regarding operation of company.
- **Plan** to incorporate a company according to requirement.
- **Demonstrate** knowledge of companies act while employed in a company.
- **Predict** various jobs opportunities in corporate sector.

Paper-II –Principles of Marketing.

Students completing this course will be able to:

- **Design** their marketing management career.
- **Analyze** business environment with different aspects like Economic, Social, Ethical, and behavioral etc.
- **Select** a new market opportunity.
- **Apply** the knowledge concepts to face various challenges and issues of marketing in present era.

B.Com. Part-III
Paper-I Insurance

Students completing this course will be able to:

- **Define** the life and general insurance and distinguish between the two.
- **Analyze** current insurance plans with investment point of view.
- **Demonstrate** knowledge of insurance contracts and various provisions.
- **Develop** skills to facilitate insurance product cost, pricing, marketing and distribution.

Paper –II Industrial law

Students completing this course will be able to:

- **Explain** the different types of terminologies under various industrial acts.
- **Discuss** different types of health and welfare provisions of workers.
- **Outline** the important causes and impact of industrial disputes.

- **Prepare** a healthy environment in their workplace to establish good Industrial relations.
- **Elaborate** industrial dispute settlement procedure.

EAFM

B.Com. Part I

PAPER- I: BUSINESS ECONOMICS

After the completion of the course Students will be able to:

- Explain the role of business economics in Business decisions and business forecasting, basic Economic Problem with various Concepts of National Income.
- Analyze price and output determination under different market structure along with the concept of revenue and cost.
- Evaluate the consumer equilibrium and producer's equilibrium
- Discuss theories of Rent, Wages, Interest and Profit

PAPER- II: ECONOMIC ENVIRONMENT IN INDIA

Students completing this course will be able to:

- Discuss the Factors Affecting Economic Environment, Indian Economy, Impact of Economic Reforms on Indian Economy, Major Problems of Indian Economy, Economic Growth and Development, Role of Agriculture in Indian Economy, World Trade Organization and Indian Agriculture
- Explain the importance and objectives of Economic Planning, Agricultural Credit, Agricultural Productivity in India, New Agricultural Strategy and Green Revolution, Basic characteristics of Economy of Rajasthan, Role of Public Sector in India and its Problems, Dairy Development Programme and Tourism Development in Rajasthan, Constraints in Economic Development of Rajasthan and Remedies.
- Outline the Main Features of Indian Planning with Special Reference to Five Year Plans World Trade Organization and Indian Agriculture, Small Scale Industries and Handicrafts.
- Demonstrate the problems of Unemployment, Poverty and Disparity of Income and Wealth, Entrepreneurship & Entrepreneur, Role of Multinational Corporations in Indian Economy

B. Com. Part II

PAPER-I : FINANCIAL MANAGEMENT

Students completing this course will be able to:

- Explain Functions of Chief Financial Officer (CFO), Financial Analysis and Balance Sheet, Techniques of Financial Analysis, Preparation of Statement of Changes in Working Capital, Preparation of Cash Flow Statement, Dividend Models and Their Relevance.
- Discuss Significance of Ratio Analysis, types of Ratios, Fund Flow Analysis, Working Capital Management, Cost-Volume-Profit Analysis, Factors affecting Inventory Level and Techniques of Inventory Control, Factors affecting Dividend Policy.
- Outline the Difference between Fund Flow Statement and Cash Flow Statement, Financial Planning and Forecasting, Concept of the Cost, Factors affecting Capital Budgeting

PAPER -II: BANKING & FINANCIAL SYSTEM

Students completing this course will be able to:

- Discuss the Type of Money, Value of Money, Quantity Theory of Money, Fisher, Cambridge & Keynes Approach, Importance of Money Market, Structure, Constituents, Instruments, Characteristics, Sources of Difference in Rates of Interest, Importance of Cash less Economy, Importance and challenges in Present Indian Economy
- Explain Recent Trends in Indian Money Market, Inflation and Deflation, Monetary Policy and Techniques of Credit Control, Fiscal Policy, Meaning of core & Internet Banking and their types, Basics of Electronic Data interchange (EDI).
- Outline the Main Components of Financial System, Recent Trends in Indian Capital Market, Banking and Financial System Reforms, RBI Functions, Credit Policy in Present Setting and its Limitations.

B.Com. Part III

PAPER – I BUSINESS BUDGETING

Students completing this course will be able to:

- Discuss Business Budgets and Budgeting: Preparation of budgets, budget co-ordination. Essentials of an effective Budgeting, Forms of Cash Budget, Forecasting, Steps in the preparation of Performance Budgets, Standard Costing, Analysis of Variance.
- Explain Analysis of the current budget of the Govt. of India and Rajasthan, Essentials of Business Forecasting, Risk Analysis in Capital Budgeting.
- Outlines of Zero-Base Budgeting, Reporting to Management and Information system.

PAPER - II: INTERNATIONAL TRADE

Students completing this course will be able to:

- Explain Importance of International Trade, Problems of International Trade, Balance of Trade and Balance of Payments, Foreign Aid to India, Patents, Determination of Foreign Exchange Rate, Exchange Control in India, Role of FEMA and RBI in Foreign Exchange System.
- Discuss World Trade Organisation, GATT, Uruguay Round, World Trade Organization and its Objectives, Functions, WTO and India.
- Outline of GATS, TRIPs, TRIM, UNCTAD, EXIM Bank of India, ECGC of India.