PROGRAM OUTCOMES /PROGRAM SPECIFIC OUTCOMES AND COURSE OUTCOMES

FACULTY OF ARTS

DEPARTMENT OF ECONOMICS

Program outcomes for BA Economics

The goal of our program is to provide students with the theoretical and empirical foundations with which they can understand economic problems and address current economic issues.

PSO1 Students will be able to use economic terms, concepts and theories.

PSO2 Recognize the different views that have reasonably exist about economic problems and alternative economic systems and present those views in possible formats.

PSO3 Identify, compile, interpret, and analyze quantitative economic data by expressing relationships between concepts through graphs, statistical and mathematical analysis.

PSO4 Analyze and understand the monetary and fiscal policy and their role in an economy.

PSO5 Use economic tools and concepts to address public policy issues such as competition, environmental protection, financial regulation, labor law, or taxation.

M. A. Economics

PSO1 Collect and integrate information from a variety of sources and their analysis and interpretation.

PSO2 Study economic theories and their applicability in contemporary scenario.

PSO3 Students will be able to understand the basic functioning of domestic and global economies. PSO4 Use of basic statistical and mathematical tools for analysis.

PSO5 Apply economic analyses to their everyday lives and see economics in real world situations.

PSO6 Presentation using graphs, figures and charts and also through the use of Power Point or similar products.

PSO7 To deduce reasonable predictions about possible economic outcomes based upon economic conditions and economic theories.

PSO8 Students will be able to do effective economic analysis

DEPARTMENT OF GEOGRAPHY

PROGRAM OUTCOMES

P01. CRITICAL THINKING Geography provides the understanding of fundamentals of formation, evolution and structural diversity of physical and cultural landscape at

Regional and Global level. That helps in the study and analysis of its impact and influences.

PO2. EFFECTIVE COMMUNICATION The subject deliver knowledge about elements and processes involved and thus enable to reach people involving society- polity- economy.

P03. SOCIAL INTERACTION The subject with its diverse and dynamic field of study area and research provides the learning platform for interaction within groups of same community and outside physical world.

PO4. EFFECTIVE CITIZENSHIP Graduates understand the applications and behaviour of Geography as science and social science. It helps to synthesize, critically evaluate and present geographic information that addresses human - environmental challenges.

PO5. ETHICS In present context of Global village, the geography program helps students to identify, describe, analyse and solve complex interactions exist between the physical and human spheres. PO6. ENVIRONMENT AND SUSTAINABILITY The program helps in identifying and critically analyzing the spatial Distribution patterns of man- environment interactions, resource planning and management.

PO7. SELF-DIRECTED AND LIFE LONG LEARNING The graduate and post graduate program enables to synthesize, critically evaluate, design maps to interpret ,study of patterns of physical and human characteristics on the Earth's surface and apply geospatial tools to appraise real world problems .

2. PROGRAM SPECIFIC OUTCOME

PSO1. B.A. program enables to explain physical processes and their spatial Distribution on the Earth's surface, that includes landforms, climate, soils vegetation and hydrology. The program also focuses on regional study for better understanding of the concepts.

PSO2. HUMAN GEOGRAPHY enables to distinguish and classify human characteristics, activities, and processes and interpret their spatial Distribution composition, cultural complexs, economic inter dependence, Settlements and pattern. Resource geography study about resources, distribution, conservation and regions.

PSO3. World Regional geography and Indian geography helps in the understanding of the distribution pattern, characteristics, applications and challenges to be dealt with. It helps in the planning and decentralization of the process for sustainable development.

PSO4. The Earth's features observations and survey data analyzed, interpreted and presented through various diagrams and maps(cartography). Use of statistical methods, conduction of field instrumental survey method and its presentation in the fulfilment of the laboratory excercises.

M.A. in GEOGRAPHY

PROGRAM OUTCOMES

P01. CRITICAL THINKING Geography provides the understanding of fundamentals of formation, evolution and structural diversity of physical and cultural landscape at Regional and Global level .That helps in the study and analysis of its impact and influences.

PO2. EFFECTIVE COMMUNICATION The subject deliver knowledge about elements and processes involved and thus enable to reach people involving society- polity- economy.

P03. SOCIAL INTERACTION The subject with its diverse and dynamic field of study area and research provides the learning platform for interaction within groups of same community and outside physical world.

PO4. EFFECTIVE CITIZENSHIP Graduates understand the applications and behaviour of Geography as science and social science. It helps to synthesize, critically evaluate and present geographic information that addresses human - environmental challenges.

PO5. ETHICS In present context of Global village, the geography program helps students to identify, describe, analyse and solve complex interactions exist between the physical and human spheres.

PO6. ENVIRONMENT AND SUSTAINABILITY The program helps in identifying and critically analyzing the spatial Distribution patterns of man- environment interactions, resource planning and management.

PO7. SELF-DIRECTED AND LIFE LONG LEARNING The graduate and post graduate program enables to synthesize, critically evaluate, design maps to interpret, study of patterns of physical and human characteristics on the Earth's surface and apply geospatial tools to appraise real world problems.

Program Specific Outcomes

The post graduate program offers courses to the students to develop understanding, learning and developing research orientation in various areas: physical, social, cultural, planning and management, Biogeography, disaster management, regional and Indian context, resources , agriculture, Remote sensing and GIS, GPS, and practical laboratory work.

DEPARTMENT OF HISTORY

Program Outcomes of B. A. (History)

Students of B.A. (History) at the time of graduation will be able to:-

PSO1 Understand what are History and the relationship between past and present.

PSO2 Distinguish Primary and Secondary Sources

PSO3 Understand Basic Themes, Concepts, Chronology, Scope of History of countries and world over.

PSO4 Develop an in-depth knowledge of historical events, religions, human civilization, customs, institutions, administration, etc. in different parts of the world with a competitive approach.

PSO5 Acquire knowledge of major historical schools of thought and their methodology

PSO6 Develop critical thinking over political, social, cultural aspects of history.

PSO7 Prepare maps, charts, diagrams, historical models.

Course Outcomes:

Develop an in-depth knowledge of historical events, religions, human civilization, customs, institutions, administration, etc. in different parts of the world with a competitive approach.

M.A. History

PSO1 Acquire knowledge of major historical schools of thought and their methodology

PSO2 Develop critical thinking over political, social, cultural aspects of history.

PSO3 Prepare maps, charts, diagrams, historical models.

PSO4 Compile bibliography composite.

PSO5 Develop interests in archaeological and archival sources and to preserve and conserve culture.

PSO6 Develop lessons of morality and patriotism.

PSO7 Prepare for various types of competitive examinations.

PSO8 Job opportunities in National Archives, Archaeological Survey of India , different kinds of museums in India

PSO9 Develop research skills, historical analysis.

DEPARTMENT OF POLITICAL SCIENCE

PROGRAMME SPECIFIC OUTCOMES

BA Political Science

PSO 1 - Discussing the most important political theorists in the Indian and western tradition and ideas.

PSO 2 – Analyzing the Indian constitutional provisions and political system.

PSO 3 - Encouraging a comprehensive, comparative understanding of specific world constitutions such as UK, USA, China, Switzerland and France.

PSO 4 – Understanding operations of the international system

PSO 5 – Assessing fundamental principles of political science and discriminating between normative and empirical theories.

Program Specific Outcomes

MA Political Science

PSO 1 - Discussing the most important political theorists in the Indian and western tradition and ideas.

PSO 2 - Critical evaluation of social, economic and political variables for a proper understanding of the plurality of Indian society.

PSO 3 - Developing knowledge of administrative studies with special reference to Indian administrative structures and practices.

PSO 4 - Building overall consciousness regarding national political history, foreign policy and international relations.

PSO 5 - Analyzing the working of important international and regional organizations like UN, EU, ASEAN, SAARC etc.

PSO 6 - Assessing fundamental principles of political science and discriminating between normative and empirical theories.

FACULTY OF COMMERCE

1. Department of ABST

Program Outcomes B. Com and M. Com.

- This program could provide Industries, Banking Sectors, Insurance Companies, Financing companies, Transport Agencies, Warehousing etc, well trained professionals to meet the requirements
- After completing graduation, students can get skills regarding various aspects like Marketing Manager, Selling Manager, over all Administration abilities of the Company
- Capability of the students to make decisions at personal & professional level will increase after completion of this course
- Students can independently start up their own Business
- Students can get thorough knowledge of finance and commerce
- The knowledge of different specializations in Accounting, costing, banking and finance with the practical exposure helps the students to stand in organization.

Program Specific Outcomes

- The students can get the knowledge, skills and attitudes by the end of the B. Com degree course
- By goodness of the preparation they can turn into a Manager, Accountant, Management Accountant, cost Accountant, Bank Manager, Auditor, Company Secretary, Teacher, Professor, Stock Agents, Government employments and so on.
- Students are able to prove themselves in different professional exams like CA, CS, CMA, RPSC, UPSC as well as other cources
- The students will acquire the knowledge, skill in different areas of communication, decision making, innovations and problem solving in day to day business activities
- Students will gain thorough systematic and subject skills within various disciplines of finance, auditing and taxation, accounting, management, communication, computer
- Students can also get the practical skills to work as accountant, audit assistant, tax consultant, and computer operator as well as other financial supporting services
- Students will learn relevant Advanced accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business
- Students will be able to do their higher education and can make research in the field of finance and commerce.

DEPARTMENT OF BUSINESS ADMINISTRATION

PROGRAMME OUTCOMES B.COM (REGULAR)

This program could provide Industries, Banking sectors, Insurance companies; FMCG companies etc well trained professionals to meet the requirements.

After completing graduation, students can get skills regarding various aspects like sales, legal aspects, entrepreneurial skills etc.

Capability of the students to make decisions at personal and professional level will increase after completion of this course.

Students can independently start up their own business.

Students can get thorough knowledge of entrepreneurship, law, and different areas of management.

The knowledge of different specialisation areas of management helps the students to make decisions regarding further higher studies and career choices.

PROGRAMME SPECIFIC OUTCOME

PSO 1 CRITICAL THINKING Understanding the practical aspects of managerial activities and management to use effectively for the betterment of Companies. It helps in

analyzing and evaluating the appropriate ways of inculcating management resources for their best use.

PSO2 Effective Communication It helps in learning new skills to have an effective trade and commerce by learning the ways of working in dynamism. As to understand the aspects of dynamism in the management students must be knowing the managerial attributes of communication, leadership etc.

PSO3 Social Interaction Leads to knowledge of social culture and the trends to be followed in the environment. It helps in assessing the managerial competence . it encourages the student's zeal to work with positive attitude while dealing with social environment.

PSO4 Effective Citizenship Human Resources and its management leads to development of key attributes like : knowledge, skills and abilities to groom and shape the whole personality as a valued citizen.

PSO5 Ethics Concept and Theories of management, legal aspects of business, organisation behaviour, Industrial Laws leads to developing an effective decision making skills. It enhances the understanding of ethical code of conduct and helps in differentiating between right and wrong.

PSO6 Environment and Sustainability Understanding the social, economic, technological political and global environment by studying the subjects to understand the vital role of each aspect in business cycle and its growth.

PSO7 Self Directed and Lifelong Learning Descriptive and practical learning helps in developing insights to know more about the management which would help in liberal knowledge of subject. It leads to the overall development by clarity of ideas to pursue endeavours in future which thereby helps in lifelong learning of the practical discipline to deal in management and commerce related activities.

M. Com. in Bus Adm.

Program Outcome

- To provide a systematic and rigorous learning and exposure to Banking andϖ Finance related disciplines.
- To train the student to develop conceptual, applied and research skills asϖ well as competencies required for effective problem solving and right decision making in routine and special activities relevant to financial management and Banking Transactions of a business.
- To acquaint a student with conventional, as well as contemporary areas in the discipline of Commerce.
- To enable a student well versed in national as well as international trends.

- To facilitate the students for conducting business, accounting and auditing practices, role of regulatory bodies in corporate and financial sectors nature of various financial instruments.
- To provide in-depth understanding of all core areas specifically Advanced Accounting, International Accounting, Management, Security Market Operations and Business Environment, Research Methodology and Tax planning.

Program Specific Outcome

- After Completing Masters in Commerce students are able to:
- Develop an ability to apply knowledge acquired in problem Solving.
- Ability to work in teams with enhanced interpersonal skills and communication.
- The students can work in different domains like Accounting, Taxation, HRM, Banking and Administration.

DEPARTMENT OF ECONOMIC ADMINISTRATION AND FINANCIAL MANAGEMENT

Programme Outcome (UG)

- PO1 Critical Thinking Understand the practical aspects of banking activities and managing Finance to use effectively for the Socio-economic Development. It helps in analyzing and evaluating the appropriate ways of inculcating economic resources for their best use.
- PO2 Effective Communication It helps in learning new skills to have an effective Trade and Commerce by learning the ways of working in dynamism. As to understand the aspects of dynamism in the Economy, student must be knowing the financial attributes of raising the funds and the Market structures which is an important topic of this Course
- PO3 Social Interaction Leads to have an knowledge of social culture and the trends to be followed in the environment. It helps in assessing the demand and supply forces. It encourages the student zeal to work with positive attitude while dealing with social environment
- PO4 Effective Citizenship Finances and its Management leads to develop the key attributes like:- Knowledge, skills and abilities to groom and shape the whole personality as a valued Citizen
- PO5 Ethics Concepts of Economy of Rajasthan, ethical environment, CSR leads to develop an effective decision-making. It enhances the ethical code of conduct and differentiates between the right and wrong
- PO6 Environment and Sustainability Understanding the Social, Economic, Technological, Political and Global environment by dealing in the subject to understand the vital role of each aspect in business cycle and its growth
- PO7 Self Directed and Lifelong Learning Descriptive and practical learning helps in developing insights to know more about the Economy which would help in liberal knowledge of the subject. It leads to the overall development by clarity of ideas to

pursue endeavours in future which thereby helps in lifelong learning of the particular discipline to deal in Finance and Commerce related activities

Program outcomes of PG Masters in Commerce in Economic Administration and Financial Management

Programme Specific Outcome

- PSO1 Critical Thinking Helps in making students acquainted with research-oriented study in the contemporary areas of Commerce specifically in the trade, Finance and Banking at a larger perspective. It focuses on in-depth understanding of the core subjects by studying the advanced level of Economics, Banking and International Finance
- PSO2 Effective Communication It enables a student well versed in national as well as international trends. It supports and focuses on intellectual development of the students for conducting business, trading practices. The course helps in better understanding of role of regulatory bodies in corporate and financial sectors, nature and working of various financial instruments.
- PSO3 Social Interaction Emphasize is given on to impart knowledge related to socio-economic impact of the subject line. It leads to have an knowledge of social culture and the trends to be followed in the environment. It helps in clarity of resource mobilization in the market structures.
- PSO4 Effective Citizenship Finances and its Management leads to develop the key attributes like:- Knowledge, skills and abilities to groom and shape the whole personality as a valued Citizen
- PSO5 Ethics Course and its topic has a relevance with social responsibility of Candidates in terms of morale Building, learning right ways to manage funds, legal aspects of Budgeting, Demand and supply in Market.
- PSO6 Environment and Sustainability Understanding the Social, Economic, Technological, Political and Global environment by dealing in the subject and its specialized streams to understand the vital role of each aspect in terms of business growth and development.

FACULTY OF SCIENCE

DEPARTMENT OF BOTANY

Programme Outcomes (B.Sc. Botany)

PO1 Practical skills – Students learn to carry out practical work in the lab as well as in the field.

PO2 Scientific knowledge –Understand the basics of plant science and fundamental processes of plants and their exploration.

PO3 Environment and sustainability – Understand the environmental issues and their impact on society.

PO4 Creative skills – Students express their creativity by preparing charts and models based on their curriculum.

PO5 Effective communication – Students learn to communicate through various electronic modes and express themselves effectively.

Programme Specific Outcomes (B.Sc. Botany)

PSO1 Understand the basic concepts of Cell Biology, Microbiology, Genetics and Plant Breeding. PSO2 Understand the economic importance of plants and their uses for social welfare.

PSO3 Identify the plants on the basis of taxonomic characters.

PSO4 Write down the classification and characteristics of Algae, Fungi, Bryophyta, Pteridophyta, and Gymnosperms.

PSO5 Identify plant diseases on the basis of their symptoms and learn control measures.

PSO6 Understand applications of Molecular Biology and Biotechnology with respect to plants.

PSO7 Understand morphology, anatomy, embryology and physiology of plants.

PSO8 Understand basic concepts of ecology.

PSO9 Learn laboratory and field experiments in the above mentioned fields of Botany.

Program Outcomes of M. Sc. Botany

PO-1 Critical Thinking: Impart ability to formulate hypothesis and constraint condition for analyzing the situation, problem and arrive at an informed reasoned decision (intellectual, professional, social & personal) taking care of different perspectives.

PO-2 Knowledge of Flora Understanding the climatic zone, plant classification and succession, identification and differentiation, different tools & techniques and the application of same in real world and chosen professional field.

PO-3 Analysis and Interpretation Of finding generated through taxonomical, botanical, laboratory, gene culture, statistical studies and other tools & techniques used in subject.

PO-4 Communication Skills Read, listen and understand the core idea/meaning of the received communication and clearly speak, write or communicate the thoughts, idea, reasons, findings etc. Ensure dispute resolution and team building for collaborative works.

PO-5 Ethics: Understand the value system diversity and its acceptance. Awareness about ethics involved in study and research in different subjects. Know the regulatory

framework such as biodiversity convention, biodiversity conservation, environmental and ecological frameworks etc.

PO-6 Environment and Sustainability: Perception of environmental impacts and sustainability issues in plant diversity, assessment, conservation and economic utilization of floral resources.

PO-7 Self-directed and Life-long Learning: Understand the need of and develop the ability to continual, unassisted, life-long learning in fast changing socio- technological developments.

Program Specific Outcome:

PSO-1 Students understand classification, evolution & life cycle of lower to higher plants and their economic and ecological importance

PSO-2 Knowledge about the cell, its structure, cell organelles & their functions

PSO-3 Understanding of plant physiology & biochemistry, role of secondary metabolites, adaptation in plants in different stress conditions,

PSO-4 Acquaintance about morphological, anatomical & reproductive characters of plants, identification of different plant families and their systematic study.

PSO-5 To understand plant diseases & their control, microbiology.

PSO-6 Gaining of knowledge about environment, plant ecology, traditional knowledge, herbal drugs.

PSO-7 Understanding plant genetics & inheritance, plant tissue culture.

DEPARTMENT OF CHEMISTRY

Programme outcomes (B.Sc. Chemistry)

PO1 Explain, resolve and understand the all main concepts in various disciplines of chemistry.

PO2 Resolve the difficulty in various reactions and also give methods and logical reason for various reactions

PO3 Utilize the scientific skills to plan, perform and analyze the product of various chemical reactions.

PO4 Make alertness about the effect of chemicals on the environment, society and surroundings

Programme Specific Outcomes (B.Sc. Chemistry)

PSO1 Know about chemistry of various compounds through theoretical and practical skills

PSO2 To give structure, reactivity of reactant, type of product yield and chemical reaction mechanism

PSO3 Know about the molecular formula of various compounds

PSO4 Use advance techniques, Charts and models Equipment

PSO5 Explain the relationship between molecular structure and their reactivity

PSO6 Know about various lab precautions and safety.

PSO7 Gain research based knowledge, skills and operate the various chemistry based equipment.

M. Sc. Chemistry

Programme Outcomes

After successful completion of two year degree program in chemistry, a student should be able to:

PO-1. Understand Stereochemistry and Bonding in Main Group Compounds.

PO-2. Derive Electronic Spectra of Transition Metal Complexes

PO-3. Get familiar with ORD and CD

PO-4. Determine structure by using Microwave, Electronic and NMR Spectroscopy.

PO-5. Learn about Nuclear and Radiochemistry.

PO-6. Get a Review on Types of Reaction Mechanisms.

PO-7. Learn about Quantum Chemistry, Electrochemistry and Surface Chemistry.

PO-8. Learn about the potential uses of Analytical Techniques and Statistics.

PO-9. Become professionally trained in the area of Industry, Material Science, Green Chemistry and Nano-Technology.

PO-10. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of Chemistry experiments.

PO-11.Demonstrate, solve and an understanding of major concepts in all disciplines of Chemistry.

PO-12. Solve the problem and also think methodically, independently and draw a logical conclusion.

PO-13. Create an awareness of the impact of chemistry on the society, and development outside the scientific community.

PO-14. Become professionally trained in the area of Industry, material science, lasers and Nano-Technology.

PO-15. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of Chemistry experiments.

PO-16. To inculcate the scientific temperament in the students and outside the scientific community.

PO-17. Apply modern methods of analysis to chemical systems in a laboratory setting.

Programme Specific Outcomes

PSO-1. Learn basics of Metal Ligand Bonding

PO-2. Know the structure and bonding in molecules/ ions and predict the Structure of molecule/ions.

PSO-3. Understand the various type of aliphatic, aromatic, nucleophilic substitution reaction.

PSO-4. Understand and apply principles of Schrodinger Equations

PSO-5. Learn the Familiar terms like Adsorption and Micelle.

PSO-6. Understand good laboratory practices and safety.

PSO-7. Carry out experiments in the area of organic analysis, estimation, separation, derivation process, conduct metric and potentiometric analysis.

PSO-8. Understand Vibrational and Molecular Spectroscopy.

PSO-9. Learns the basic concepts of NMR and Mossbauer Spectroscopy.

PSO-8. Study various analytical techniques like Conductometry, potentiometry, Coulometry and Atomic Absorption Spectroscopy.

PSO-9. Learn about nanomaterials, its synthesis and applications.

PSO-10. Study Solid state chemistry and superconductors.

PSO-11. Study the Quantum Mechanical aspects of chemical bonding.

PSO-12. Understand disconnection approach and ring synthesis.

PSO-13. Learn various extraction techniques for natural products.

PSO-14. Study the mode of action of drugs.

PSO-15. Learn about antibiotics, analgesics and antipyretics.

DEPARTMENT OF MATHEMATICS

Program Specific Outcomes

1. Bachelor's degree in mathematics is the culmination of in-depth knowledge of algebra, calculus, geometry, differential equations and several other branches of mathematics. This also leads to study of related areas like computer science and statistics. Thus, this programme helps learners in building a solid foundation for higher studies in mathematics.

2. The skills and knowledge gained has intrinsic beauty, which also leads to proficiency in analytical reasoning. This can be utilized in modelling and solving real life problems.

3. Students undergoing this program learn to logically question assertions, to recognize patterns and to distinguish between essential and irrelevant aspects of problems. They also share ideas and insights while seeking and benefitting from knowledge and insight of others. This helps them to learn behave responsibly in a rapidly changing interdependent society.

4. Students completing this program will be able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematicians.

5. Completion of this program will also enable the learners to join teaching profession in primary and secondary schools.

6. Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

7. Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.

8. Introduction to various courses like group theory, ring theory, field theory, metric spaces, number theory.

9. Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

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

11. Understand, formulate and use quantitative models arising in social science, Business and other contexts.

12. Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given course.

Programme Outcomes of M.Sc. in Mathematics (SFS)

PO-1 Mathematical Knowledge: Demonstrate an understanding of the basic concepts in various areas of mathematics and their uses in the solution of some real life problems. Provide a systematic understanding of the concepts and theories of mathematics and their applications to an advanced level and enhance career in field of mathematics.

PO-2 Problem Analysis and Solution: Develop the ability to apply mathematical ideas to investigate the complex physical problems and the use of mathematical techniques to solve them.

PO-3 Logic and Critical Thinking: Think critically with abstract reasoning and to develop a logically correct mathematical argument. Develop the ability to make ideas precise by formulating them mathematically, analyze and interpret technical arguments. Criticize mathematical arguments developed by themselves and others.

PO-4 Communication: Communicate mathematical thoughts and ideas with the community in both oral and written format, computing and graphical means. Explain mathematical information graphically, symbolically, numerically. Develop the ability of mathematical writing and make effective presentations.

PO-5 Lifelong learning: Recognize the need to engage in lifelong learning through continuing education and research.

PO-6 Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and computing tools such as MATLAB, C-Language etc. with an understanding of the limitations.

PO-7 Research Proposal: Design and deliver a significant research work. Demonstrate the necessary skills and knowledge of their chosen research area. Understand the philosophy of research in mathematics.

Program Specific Outcomes of M.Sc. in Mathematics

PSO-1 Understanding of the fundamental axioms in mathematics and capability to develop ideas based on them

PSO-2 Provide knowledge of a wide range of mathematical techniques and application of mathematical methods/tools in other scientific and engineering fields.

PSO-3 Provide advanced knowledge in pure and applied mathematics, empowering the students to pursue higher studies or research work.

PSO-4 Guide students for preparation of competitive exams e.g. NET, GATE, etc.

Program Outcomes:

After undergoing the course, the students demonstrate the necessary skills and knowledge of their chosen research area and understand the philosophy of research in mathematics.

DEPARTMENT OF PHYSICS

B.Sc. Physics Program Outcome (PO's)

A graduate of the B.Sc. (Physics) Program will be able to :

PO1 Demonstrate a fundamental and systematic understanding of the core academic field of Physics PO2 Explain the fundamental concepts behind the complex physical phenomenon.

PO2 Apply critical thinking in framing assumptions and devising methodologies for countering any scientific problem.

PO3 Formulate the solution to scientific problems with suitable data collection and graphical representation via selection of mathematical/statistical and experimental methods to draw valid conclusions.

PO4 Write scientific report on procedure, formulation and analysis of relevant experimentation.

PO5 Address one's own learning needs relating to current and emerging areas of study relating to Physics, making use of research, development and professional materials as appropriate, including those related to new frontiers of knowledge in Physics.

Program Specific Outcome:

A graduate of the B.Sc. (Physics) Program will be able to :

PSO1 Demonstrate understanding of the basic concepts of relating to Optics, Electromagnetism, Mechanics, Thermodynamics, Electronics, Mathematical physics, Nuclear physics, Quantum mechanics, Solid state physics.

PSO2 Develop Critical thinking and problem solving capabilities.

PSO3 Demonstrate subject-related and transferable skills that are relevant to some of the Physics related jobs and employment opportunities.

M. Sc. Physics (SFS)

Program Outcome (PO's)

A postgraduate of the M.Sc. (Physics) Program will be able to:

PO1 Develop understanding and skills in Physics for critical assessment of a wide range of ideas and complex problems and issues relating to the various sub fields of Physics.

PO2 Communicate effectively in terms of oral and written scientific communication to exhibit experimental results and conceptual ideas.

PO3 Apply mathematical and computational tools to draw valid conclusions to problems relating to Physics.

PO4 Understand the issues of laboratory safety, intellectual property, environmental contexts and sustainable development.

PO5 Address one's own learning needs relating to current and emerging areas of study relating to Physics, making use of research, development and professional materials as appropriate, including those related to new frontiers of knowledge in Physics.

Program Specific Outcome:

A postgraduate of the M.Sc. (Physics) Program will be able to:

PSO-1 Demonstrate comprehensive knowledge about materials, including current research/ literature, relating to essential and advanced learning areas pertaining to various subfields in Physics.

PSO-2 Plan and execute Physics-related experiments or investigations, analyze and interpret data/information collected using appropriate methods.

PSO-3 Demonstrate subject-related and transferable skills that are relevant to some of the Physics related jobs and employment opportunities.

DEPARTMENT OF ZOOLOGY

Program Outcomes: Program Specific Outcomes

Zoology' the word is originated from the Greek language where "zoion" stands for animals and "logia" exemplifies for study, making zoology the science of animals. This branch of science deals not only with the morphological structures of animals but also with their behavioural aspects. Commencing from evolution, the classification, ecological distribution, embryology, physiology, habits or behaviour, and all other vital phenomena associated with the life events of living or even extinct animals are explored under the canopy of zoology.

During three year program in B.Sc. (Zoology) the students will able to:

- Develop a deeper understanding of zoological concepts at organism level.
- Describe the taxonomy and systematic study of animals both invertebrates and vertebrates, also interpret general evolutionary relationships among and between different animal groups.
- Get knowledge about the various animal habitats and their behaviour. Enable them to handle various scientific equipments and perform the laboratory experiments.
- Learn about the applied Zoology such as Sericulture, Apiculture, fisheries, Vermiculture etc. and use these techniques to develop as an entrepreneur.

As a zoologist, comprehensive knowledge of animal sciences, competence to perform the lab techniques as well as the propensity for fieldwork renders limitless avenues in the field of academics, government bodies and agricultural, environmental, or pharmaceutical industries .

Program Specific Outcomes:

- Understand the basic concepts of cell biology, invertebrates, vertebrates, genetics, taxonomy, physiology, biochemistry, evolution, ecology and applied Zoology.
- Able to perform various procedures as per laboratory standards.
- Applications of different methods used in Apiculture, Vermiculture, Sericulture, Aquaculture etc.
- A wider understanding of animal diversity, including knowledge of the scientific classification and evolutionary relationships of major groups of animals.
- Characterization of the biological, chemical, and physical features of environments (e.g., terrestrial, freshwater, marine).

M.Sc. (Zoology) (SFS)

Program Outcomes:

Upon completion of M.Sc. Degree Programme, the students will be able to:

PO1 – Gain knowledge and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms

PO2 – Analyse complex interactions among the various animals of different phyla, their distribution and their relationship with the environment

PO3 – Apply the knowledge of internal structure of cell, its functions in control of various metabolic functions of organisms.

PO4 – Understands the complex evolutionary processes and behaviour of animals

PO5 – Correlates the physiological processes of animals and relationship of organ systems

PO6 – Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species

PO7 – Gain knowledge of Small Scale industries like sericulture, fish farming and vermicompost preparation.

PO8 – Understands about various concepts of genetics and its importance in human health

PO9 – Apply the knowledge and understanding of Zoology to one’s own life and work

PO10 – Develops empathy and love towards the animals

PO11 – Prepare successful professionals in industry, government, academia, research, entrepreneurial pursuits and consulting firms and face and succeed in high level competitive examinations like NET, GATE.

PO12 – Enhancing the technical skills for experimental purposes.

Program Specific Outcomes (PSO):

PSO1: Developing deeper understanding of key concepts of biology at biochemical, molecular and cellular level, physiology and reproduction at organismal level, and ecological impact on animal behaviour.

PSO2: Elucidation of animal-animal, animal-plant, animal-microbe interactions and their consequences to animals, humans and the environment.

PSO3: Understand the nature and basic concepts of cell biology, genetics, taxonomy, physiology, ecology and applied Zoology

PSO4: Recognized the relationships between structure and functions at different levels of biological organization (e.g., molecules, cells, organs, organisms, populations, and species) for the major groups of animals.

PSO5: Characterized the biological, chemical, and physical features of environments (e.g., terrestrial, freshwater, marine, host) that animals inhabit. Explained how animals function and interact with respect to biological, chemical and physical processes in natural and impacted environments.

PSO6: Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology, Cell biology, Genetics, Applied Zoology, tools and techniques of Zoology, Toxicology, Biochemistry, Animal biotechnology, Immunology and research methodology.

PSO7: Learning handling DNA sequence data and its analysis which equip students to get employed in R&D in the industry involved in DNA sequencing services, diagnostics, and micro biome analysis.

PSO8: Understanding relationships of variations in phenotypic expression of genomes and their genome wide interaction with other organisms.

PSO9: Development of an understanding of zoological science for its application in apiculture, aquaculture and agriculture including pest management vermicompost.

PSO10: Development of theoretical and practical knowledge in handling the animals and using them as model organism

PSO11: Gains knowledge about research methodologies, effective communication and skills of problem solving methods

PSO12. Contributes the knowledge for Nation building

हिन्दी विभाग स्नातक एवं स्नातकोत्तर पाठ्यक्रम **Programme Outcomes**

- निर्धारित पाठ्यक्रम के अतिरिक्त भाषा एवं व्याकरण का अध्ययन–अध्यापन उनके व्याकरण के ज्ञान में वृद्धि करता है, जिससे वे भाषा के शुद्ध स्वरूप को जानने–समझने में सक्षम होते है।
- भाषा का ज्ञान बढने से उनका आत्मविश्वास बढता है, जिसका प्रभाव उनकी अन्य गतिविधियों में भी दिखायी देता है। साहित्य के अध्ययन से उनका सवेंदनात्मक एवं कलात्मक पक्ष मजबतू होता है।
- आधुनिक साहित्य की जानकारी छात्र–छात्राओं को देना जिससे वे साहित्य की नवीनतम गतिविधियों से जुडे रह सके।
- इसमें छात्र–छात्राओं को विषय हिन्दी साहित्य के आदिकाल, भक्ति काल, रीतिकाल और आधुनिक काल के साहित्य का अध्ययन कराया जाता है। इसमें गद्य और पद्य दोनों का विशद विवेचन कराया जाता है।
- इस अध्ययन से छात्र–छात्राओं को विषय का विस्तृत ज्ञान कराया जाता है, जिससे उनकी विषय के प्रति रूचि जागृत होती है। और उनकी विश्लेषणात्मक क्षमता विकसित होती है।
- साहित्य के अध्ययन से सामाजीकरण की प्रक्रिया में मदद मिलती है।
- एक कुशल एवं उत्तरदायी नागरिक बनने में साहित्य की भूमिका बहुत महत्वपर्ण होती है, क्योकि साहित्य में भले–बुरे, नैतिक–अनैतिक सभी पक्षो ंपर चर्चा होती है।
- अपने परिवेश और पर्यावरण के प्रति जागरूकता उत्पन्न की जाती है।
- इस प्रकार साहित्य के माध्यम से हम जीवन से जुडे पहलू पर ध्यान देते है और छात्र–छात्राओं को उसके प्रति जागरूक बनाते है।
- स्नातक तथा स्नातकोत्तर पाठ्यक्रम में हिन्दी साहित्य की एक विषय के रूप में उपादयेता मानवीय व सामाजिक रूप से तो महत्वपर्ण है ही साथ ही आजीविका का एक उत्कृष्ट माध्यम भी है।
- साहित्य अध्ययन से विद्यार्थियों को मानसिक स्वास्थ्य की प्राप्ति होती है। साहित्य के माध्यम से इतिहास का ज्ञान सवेंदनाओ ंके साथ प्राप्त होता है। वर्तमान के लिए प्रेरणा और नवीन ऊर्जा का संचार होता है तथा कई रचनाओं के माध्यम से तो भविष्य की पूर्व चेतावनी व सम्भावनाएँ भी विदित होती है।
- पद्य साहित्य के सस्वर गायन से छात्र–छात्राओं में भावनात्मक अनुभूति से सकारात्मक दृष्टिकोण सहजता से निर्मित होता है और विद्यार्थियों में मनोवैज्ञानिक रूप से संवेगात्मक संतुलन की क्षमता का विकास होता है।
- कई उपदेशात्मक रचनाओं द्वारा जीवन के कठिन समय में उचित दिशा प्राप्त करने, निर्णय क्षमता तथा भाषाई कौशल द्वारा अभिव्यक्ति क्षमता का विकास, शिक्षार्थियों के व्यक्तित्व विकास में महत्वपर्ण भूमिका निभाता है। जब युवा मानसिक रूप से स्वस्थ हो तो निश्चित ही प्रत्येक क्षेत्र में स्व के लिए तथा मानव समाज के लिए उपयोगी सिद्ध होते है।

Course Outcomes B.A. Part III English Literature

Course	Outcomes After completion of course the student will have understanding of
Poetry and Drama	CO 1 – Tennyson : Ulysses R. Browning : My Last Duchess M. Arnold : Dover Beach G. M. Hopkins : The Sea and the Sky lark W. B. Yeats : A Prayer for my Daughter T. S. Eliot : Preludes CO 2 - Kalidas, Bhavabhuti, : Is Poetry Always Worthy when its Syed Amanuddin : Old? Don't Call Me Indo-Anglian R. Parthasarathy : From Homecoming Agyeya : Hiroshima CO 3 - M.GopalkrishnaAdiga : Do Something, Brother EuniceD Souza : Womenin Dutch Painting N.V.Kurup : Earthen Pots Sitakant Mahapatra : Poet the election ayaprabha : Stras DayaPawar : Oh Great
Prose and Fiction	CO 1- Munshi Prem chand : The Shroud Intizar : A Chronicle of the Peacocks Hussain Ismat : Roots Chugtai : Birth Day V.M.Basheer : My Beloved Chariotter Shashi shpande Ambai : A Kitchen in the Comer of House CO 2 - R.K. Narayan : The Gukb Charlotte Bronte : Jane Eyre 1- A Short Passage of about10 simple sentiences to be translated from Hindi to English 2- Editing a short text (Grammaticality, Logicality, Cohesion, Coherence) 3- Critical Analysis of a Prose Piece. 4- Writing a News Report.

Course Outcomes B.A. Part III Hindi Literature

Course	Outcomes After completion of course the student will have understanding of
आधुनिक काव्य	1. अयोध्या सिंह उपाध्याय – प्रिय प्रवास – सर्ग प्रथम 40 छन्द 2. मैथिलीशरण गुप्त – साकेत – नवम सर्ग 1. वेदने तू भी बनी .....पाऊ 2. निरखी सखी ये खंजन आये .....अश्रु सूखा कर लाये 3. विरह संग अभिसार भी .....और एक संसार भी 4. दोनो और प्रेम पलता है.....मुझे यही खलता है। 5. आ आ मेरी निंदिया गूंगी .....मै न्यौछावर हूँ जी 6. कहती मै, चातकि फिर बोल .....उर कै कल कल्लाल

	7 सखि निरखि नदी की धार .....आगे नही सहागे यशोधरा 1. सखि, वे मुझसे कहकर जाते 2. अब कठोर हो बज्रादपि ओ कुसुमादपि सुकुमारी 3. हे मन आज परीक्षा तेरी 3. जयशंकर प्रसाद – कामायनी – श्रद्धासर्ग – प्रथम 20 छंद आंसू –रो–रोकर सिसक कर कहता .....कुछ सच्चा स्वयं बना था। 4. सुमित्रानंदन पंत 1. प्रथम रश्मि 2. मौन निमन्त्रण 3. द्रुत झरो 5. अज्ञेय 1. बाबरा अहेरी 2. भीतर जागा दाता 3. सॉप 4. यह दीप अकेला 6. मुक्तिबोध 1. जन जन का चेहरा एक 2. दूर–तारा 3. खोल आंखे 7. धूमिल 1. प्रौढ शिक्षा 2. मोचीराग 8. दुष्यन्त 1. इस नदी की धार में ठंडी हवा आती ताक है, नाव जर्जर हो सही, लहरो में टकराती तो है। 2. खंडहर बचे हुए है इमारत नही रही, अच्छा हुआ कि सर पे कोई छत नही रही। 3. परिन्दे अब भी पर तोले हुऐ है, हवा में सनसनी घोले हुए है। 4. एक कबूतर, चिट्ठी लेकर, पहली–पहली बार उडा मौसम एक गुलेल लिये था पट से नीचे आन गिरा। 5. एक गुडिया की कई कठपूतलियों में जान है, आज शायर, ये तमाशा देखकर हैरान है। 6. होने लगी है जिस्म में जुंबिश तो देखिए, परकटे परिन्दे की कोशिश तो देखिए। 7. अब किसी को भी नजर आती नही कोई दरार, घर की हर दीवार पर चिपके है इतने इश्तहार। 8. हो गई है पीर पर्वत–सी पिघलनी चहिए इस हिमालय से कोई गंगा निकलनी चहिए। 9. बाझ की संभावनाऍ सामने है और नदियों के किनारे घर बने है। CO - 2 आधुनिक हिनदी कविता की प्रमुख प्रवृतियॉ– राष्ट्रीय काव्यधारा, छायावाद, प्रगतिवाद, प्रयोगवाद और नई कविता
निबन्ध, उपन्यास और काव्यशास्त्र	CO - 1 उपन्यास – निर्मला – प्रेमचन्द CO - 2 एकांकी – बालकृष्ण भट्ट – साहित्य जन समूह के हृदय का विकास रामचन्द्र शुक्ल – क्रोध हजारी प्रसाद द्विवेदी – भारतीय साहित्य की प्राणशक्ति नन्द दुलारे वाजपेयी – छायावाद

	रामविलास शर्मा – संत साहित्य की ऐतिहासिक भूमिका विद्यानिवास मिश्र – मेरे राम का मुकुअ भीग रहा है। CO - 3 अलंकार – परिभाषा तथा महत्व (अनुप्रास यमक, श्लेष, उपमा, रूपक, उत्प्रेक्षा, विभावना अपहुति) छन्द – परिभाषा तथा महत्व (दोहा, चौपाई, छप्पय, रोला, मालिनी, शिखरणी, द्रूतविलम्बित, हरिगीतिका) रस – परिभाषा, रस के अवयव और रस सिद्वान्त गुण – माधुर्य, ओज, प्रसाद शब्द शक्ति – अभिधा, लक्षणा, व्यंजना

Course Outcomes B.A. Part III History

Course	Outcomes After completion of course the student will have understanding of
History of Modern India (1761-1971 A.D.)	CO-1 India in the mid-eighteenth century. Maratha confederacy, its strength and weakness- clash with the British and decline of the Marathas. Expansion and Consolidation of the British rule- Bengal, Mysore, Awadh sind and Punjab- Subsidiary Alliance and Doctrine of lapse. Establishment of parliamentary control over East India Company – Regulating Act. And Pitt' s India Act. Land revenue settlements – permanent, ryotwari, mahalwari. Popular resistance to British rule- outbreak of 1857- causes, nature and results. CO -2 British policy after 1858. Nature of colonial economy – commercialization of agriculture, decline of cottage industries. Indian Renaissance- Braham samaj, Arya samaj, Ramkrishan mission. Emergence of Indian Nationalism. Formation for the Indian National Congress. Home rule movement, Muslim League. CO -3 Nationalism under Gandhi's leadership – Non cooperation, Civil Disobedience and Quit India Movement. Subhash Chandra Boss and Indian National Army. The Government of India Acts of 1909, 1919, 1935. Communal Politics and the partition of India. Progress and profile of independent India (1947-1971). Integration of States.
History of Modern World (1500-2000 A.D.)	CO-1 Renaissance and the beginning of the Modern Era. Reformation and counter- Reformation. The American revolution. The French revolution and impact. Napoleon Bonaparte. Industrial revolution CO-2 National unification of Germany and Italy. Growth of imperialism and colonialism. Eastern question and it's complexities for Europe. Revolution of 1911 in China. Modernisation of Japan. First Word War CO-3 The Russian revolution of 1917. Fascism in Italy and Nazism in Germany. Second world war. United Nations Organisation. The Chinese Revolution of 1949. Cold war. Emergence of third word. Globalisation and it's impact.

Course Outcomes B.A. Part III Political Science

Course	Outcomes After completion of course the student will have understanding of
Representative Western Political Thinkers	CO-1 Plato, Aristotle and Aquinas CO-2 Machiavelli, Hobbes, Locke, and Rousseau. CO-3 Bentham, J.S. Mill, Karl Marx and Harold J.Laski.

International Relations since World War-II and Indian Foreign Policy	CO-1 Post War International Development: Cold War & it's different Phases, U.N.O: Organization, Working and role, U.S.A and Third World, Collapse of Communist Block, Reorganisation of Europe. CO-2 Indian Foreign Policy :Determinants of Foreign Policy, India and UN,NAM and its relevance in Contemporary World, India's Look East Policy, India's relations with neighbourhood & with major powers(U.S.A., Russia and China),India in Contemporary multi- polar world. CO-3 Contemporary Trends and Issues in International Politics, Politics of West Asia, New-International Economic Order, Associations of Regional Co-operation in Asia: SEAN, SAARC, BRICS, IBSA, Demand for reforming UN & India for permanent seat of UN, Contemporary Global Issues :Human Rights, Environmental Issues, Gender Justice, Terrorism, Nuclear Proliferation

Course Outcomes Part III Economics

Course	Outcomes After completion of course the student will have understanding of
Introduction To International Trade , Development And Public Economics	**CO-1** Features of International Trade, Gains from Trade. Trade Theories: Adam Smith, Recardo, Harberler, MillandH0 Theory (Elementary treatment).Free Trade and Protection, foreign. Exchange Market and Exchange Rate. Balance of Trade And Finance of payment :Definition·and Structure, International Monetary Fund, WTO scope . **CO -2** Economic Growth and Development : Factors affecting Economic Growth Measures of Development, Lewis Theory of Unlimited Supply of Labor, Balanced V/Unbalanced Growth Model, Harrod Domerand So low Models, Concept of Poverty Inequality. International Bank for Reconstruction and Development, Asian Development. **CO-3** Nature and Scope of Public Finance. Role of Government in the Economy. Public Goods and Private Goods. Theory of Maximum Social Advantage, Optimal Budgeting. Public Revenue: Canons of Taxation, Impact, Incidence and Shifting of Taxation. Direct and Indirect Taxation GST, Public Expenditure: Canons of Public Expenditure, Classification and Effects on Production and Distribution. Public Debt: Meaning Objective and Burden Theories. Fiscal Policy: Meaning, Objectives and Anti-Inflationary Policy.
Application of Mathematics in Economics (A	**CO-1** Differential Calculus and integral Calculus: Application in Economics: Matrix and Determinants: Solution of Simultaneous Equations: Maxima and Minima: Convexity and Concavity. **CO-2** Production Functions: Product Curves: Output Elasticity of Factor input; Linearly Homogeneous and Cobb-Doulas Production Functions: Optimization Behavior of a Firm–Constrained Cost Minimization, Constrained Output Maximization and Profit Maximization; Input Demand Functions. **CO-3** Input Output Analysis: Determination of Gross Output, an Value Added in Open Input- Output Model. Dominant Strategies and Saddle Point Solution
Environmental Economics (B)	**CO-1** Review of Microeconomics and Welfare Economics Market failure in the Presence of Externalities; Property Rights and the Coase Theorem· Sustainable Development: Concepts and Measurement. **CO-2** The Environment Kuznets Curve; Trade and Environment; Environmental Problems. Global warming and Climate Change; Methods of Environment Valuation

	CO-3 International Environmental Policy: Conventions and Treaties UN Effort Protect the Environment, Stockholm, Rio, Johansberg, Agenda21, OECD Environment1 Committee Report, Kyoto, and Convention on Biodiversity, Paris Climatic Conventions; Environmental Governance in India; WTO and Environment
Economy of Rajasthan (C)	**CO-1** Position of Rajasthan in Indian Economy: Population, Area, Agriculture, Industry, Demographic Features, Literacy, Health and Nutrition Indicators). Natural Resources Land, Water, Livestock and Wild Life, Minerals and Mineral Policy, Production and Productivity of crops. **CO-2** Infrastructure in the State (Irrigation, Power, Road), Industrial Development of the State (Agricultural and Mineral Based Industries, Small Scale and Cottage Industries, Export Based Units, Rajasthan Handicrafts). Growth Centers and Development of Industrial areas. **CO-3** Economic Planning and Development in Rajasthan. women Empowerment and Child Development. Problems of Poverty and unemployment

Course Outcomes Part III Geography

Course	Outcomes After completion of course the student will have understanding of
Paper I:World Regional Geogra phy	**CO-1** Asia Terrain Pattern, Drainage, Climate, Natural Vegetation, Soils, Population and Economic Base of the Continent In General. Regional Study of South East and south east Asia. Europe –Terrain pattern Drainae, Climate, Natural vegetation soils, population and economics base of the Continent In General; Regional Study of Britsh Isles, France and Geramany. **CO-2** North South America:Terrain Pattern, Drainage. Climate. Natural Vegetation, Soils, Population and Economic Base of the Continent In General Regional Study of New England and Brazil. **CO-3.** Australia and New Zealand: Terrain Pattern, Drainage, Climat Natural Vegetation, Soils, Population and Economic Base of Australia and New zeland and in general.
Paper II: Geography of India	**CO-1** India in the context: of South and Southeast Asia, geological structure, physiographic divisions seasons, major climates regions. Vegetation major soils and regions drainage system, water resource and irrigation projects, forest, mineral and power resources their utilization policy and conservation strategies. **CO-1** Agriculture : typology major crops, changing pattern of crops, agriculture growth during plan period and green revolution, livestock resources and their development, industrial growth and development, industrial localization with reference to iron and steel, cotton textile, cement and chemical industries. **CO-3** Regional disparities in economic development, planning and economic region of India, multilevel planning, problems and prospects linking of rivers, transport development- Rail, Road, Air and waterways. Foreign trade – challenges and prospects.

Course Outcomes B.Sc. Part III Mathematics

Course	Outcomes After completion of course the student will have understanding of
Paper-1: Algebra	CO1: Definition and sim properties of Groups Subgroups. Permutation group, Cyclic group, Cosets, Lagrange's theorem on the order of subgroups of a finite order group

	CO2: Morphism of groups, Cayley's theorem. Normal subgroups and Quotient groups. Fundamental theorems of Isomorphism CO3: : Definition and simple properties of Rings and Subrings. Morphism of rings. Embedding of a ring, Integral domain and field. Characteristics of a Ring and Field. CO4: Ideals and Quotient Ring. Maximal ideal and Prime ideal. Principal Ideal domain. Field of quotients of an integral domain. Prime fields. Definition, Examples and Simple properties of Vector spaces and Subspaces. CO5: Linear combination, Linear dependence and Linear independence of vectors. Basis and Dimension. Generation of subspaces. Sum of subspaces. Direct sum and Complement of subspaces. Quotient space and its dimension
Paper-2: Complex Analysis	CO1: Complex plane. Connected and Compact sets Curves and Regions in complete plane. Jordan curve Theorem (statement only). Extended complex plane. Stereograph projection. Complex valued function - Limits, Continuity and Differentiability. Analyt functions, Cauchy-Riemann equations (Cartesian and polar form). Harmonic function Construction of an analytic function CO2: Complex integration Complex line integrals, Cauchy integral theorem, Indefini integral, Fundamental theorem of integral calculus for complex functions. Cauchy integr formula, Analyticity of the derivative of an analytic function, Morera's theorem, Poisso integral formula, Liouville' theorem. CO3: Taylor's theorem. Laurent's theorem Maximum modulus theorem. Power series Absolute convergence, Abel's theorem, Cauchy-Hadamard theorem, Circ and Radius of convergence, Analyticity of the sum function of a power series. CO4: Singularities of an analytic function, Branch point Meromorphic and Enti functions, Riemann's theorem, Casorati-Weierstrass theorem. Residue at a singularity, Cauchy's residue theorem. Argument principle. Rouche's theoren Fundamental theorem of Algebra CO5: Conformal mapping. Bilinear transformation and its properties.
Paper-3: Mechanics	CO1: Velocity and acceleration - along radial and transverse directions along tangent and normal directions. S.H.M., Hooke's law, motion along horizontal and vertical strings. CO2: Motion in resisting medium Resistance varies as velocity and square of work Work and Energy. Motion on a smooth curve in a vertical plane. Motion on the inside and outside of a smooth vertical circle. Projectile. CO3: Central orbits-p-r equations, Apses, Time in an orbit, Kepler's law of pl motion. Moment of inertia - M.I. of rods, Circular rings, Circular disks, Solid and spheres, Rectangular lamina, Ellipse and Triangle. Theorem of parallel axis. Prom inertia. CO4: Equilibrium of coplanar force, moments and friction. CO5: Virtual work and Catenary

Course Outcomes B.Sc. Part III Zoology

Course	Outcomes After completion of course the student will have understanding of -
Paper-1: **STRUCTURE AND FUNCTIONS OF CHORDATE TYPES**	CO1: Comparison of habit. external features and anatomy of Herdmania, Branchiostoma (excluding development).,Ascidian tadpole larva and its metamorphosis, Affinities of Hemichordata, Urochordata and Cephalochordate, Petromyzon, Ammoecoete larva. CO2: Structure and development of placoid scales, feathers and hair. CO3: Comparative anatomy of vertebrates including various systems CO4: Chordate Adaptations including, Flight adaptations, in birds and bird migration and Adaptive radiation in Mammals. CO5: Scales and fins, migration and parental care in Pisces, Parental care. in Amphibia, Poisonous and non-poisonous snakes, poison apparatus.
Paper-2: **ECOLOGY AND ENVIRONMENTAL BIOLOGY**	CO1: Basic concepts in ecology,Its meaning and history. CO2:Ecosystem: Production, consumption and decomposition in an ecosystem: Concepts of food-chain. food web, trophic structure, ecological pyramids CO3: Population ecology, Community ecology, Habitat Ecology CO4: Environmental Biology, Natural resources CO5:Environmental pollution CO6: Wildlife conservation, Impact of urbanization CO7: Space ecology: Space ecosystem, space problems and their solutions, colonization.
Paper-3: **APPLIED ZOOLOGY, ETHOLOGY AND BIOSTATISTICS**	CO1: Principles and Practices of the following: Vermiculture. Sericulture, Apiculture, Prawn culture, Poultry keeping,Pisciculture. CO2:Economic Importance of the following: Protozoa,Corals and coral reefs, Helminthes, Arthropods; Insects and their management, Mollusca: Outline idea of pearl culture. CO3: Concepts of Ethology, Methods of studying brain behavior: Neuroanatomical, neurophysiological and neurochemical techniques. CO4: Pheromones and their role in alarm spreading, biological rhythms and biological clocks. CO5: Introduction, scope and application of Biostatistics. CO6:Frequency distribution, Graphical and tabular presentation of data, Mean. median, mode and their significance, Standard deviation, standard error and their significance, Hypothesis: Null and alternative: Student's t- test.

Course Outcomes B.Sc. Part III Botany

Course	Outcomes After completion of course the student will have understanding of -
Paper 1. Plant morphology and Anatomy	CO-1 The basic body plain of flowering plants. Modular type of growth Diversity of Plant form in annuals ,biennials and perennials. CO-2 The Shoot system The shoot apical meristem and its histological organization, vascularisation of primary shoot In monocotyledons and cotyledons and its functions. CO-3 The leaf origin, development, arrangement The root system: root apical meristem, Structural modification for Storage, respiration, Reproduction and root microbe interaction. CO-4 Morphology and anatomy of seed. Significance of seed suspended animation Vegetative propagation.
Paper-2 Ecology and environment	CO-1 Plants and environment: Atmosphere, Adaptation Hydrophytes and xerophytes, heliophytes and Sciophytes. Light: Global radiation ,phtosynthetically active Radiation.Zonation in water body Photoperiodism Megatherms, mesotherms, microtherm Heikistotherm, the rmoperidiocity and Vernalisation Soil profile development _weathering and maturation.Soil texture. Soil types. Interaction among organisms. CO-2 Community ,Ecosytem and phytogeography. Community characteristics : Stratification, life forms and biological spectrum.Ecological succession: types.Ecosystem structure. Biogeochemical cycles of carbon and phosphorus Vegetation types of Rajasthan, Endangered plants of Rajasthan. CO-3 Basic concepts of center of origin of cultivated plants..Food plants, Vegetables, fruits, vegetable oil CO-4 Spices: General account with an emphasis on those cultivated in Rajasthan. those cultivated in Rajasthan. Ethanobotany an general account.
Paper-3. Angiosperm Taxonomy and Embryology	CO-1 Introduction of Taxonomy, Botanical, Botanical nomenclature, International Code of Botanical Nomenclature. Taxonimic literature. Types of Classification. Taxonomy and economic Importance of Ranunculaceae, Brassicaeae, Papaveraceae CO-2 Rubiaceae, Asteraceae, Apocynaceae Asclepiadaceae, Convolvulaceae, Solanaceae Acanthaceae, Lamiaceae, Chenopodiaceae CO-3 Ontogeny of the flower parts developments and variations,Structure of anther. Types of ovules, megasporogenesis, development of female gametophyte, Pollination. CO-4 Development of dicot and monocot embryo. Polyembryony, Parthenocarpy , Apomixis.

Course Outcomes B.Sc. Part III Physics

Course	Outcomes After completion of course the student will have understanding of -
Paper 1. Quantum Mechanics and Spectroscopy	CO-1 Difficulties of classical mechanics to explain: the black-body emission spectrum, specific heat of solids. Compton effect, De-Broglie hypothesis, diffraction and interference experiments of particle(Davisson—Germer experiment). Uncertainty principle :position and momentum, angle and angular momentum, energy and time..Operators: linear operators, product of two operators, commuting and non—commuting operators. CO-2 Schrödinger wave equation: general equation of wave propagation, propagation of matter waves, time dependent and time-independent Schrödinger equation. Time independent Schrödinger equation, stationary state solution, one dimensional problem. CO-3 Symmetric square well potential ,reflection and transmission coefficients, resonant scattering. Wave-functions of H-atom for ground and first excited states. CO-4 Energy level derivation for H-atom, quantum features of hydrogen spectra and hydrogen like spectra. Absorption and emission spectroscopy, its block diagram, brief explanation about function of each elements and it's limitations.
Paper 2 Nuclear and Particle Physics	CO-1 Discovery of Nucleus, Nuclear Angular momentum, Nuclear Forces, Nuclear Models. CO-2 Radioactive Decays, Positron Emission, Gamma Decay, Nuclear Fission and Fusion. CO-3 Interaction of Nuclear Radiation with Matter, Radiation Detectors, Gas filled detector. CO-4 Elementary Particles: Necessity of high energy to discover elementary constituents, Fundamental Interactions Four types of fundamental forces. Symmetries and Conservation laws.
Paper 3 Solid State Physics	CO-1 Bonding in Solids and Crystal structure, Force between atoms, Ionic bonds, Covalent and metallic bonds, Vanderwaal's and Hydrogen bonding. Periodicity in lattices, Basis, lattice point and space lattice, Crystallography and Diffraction. CO-2 Formation of bands, Periodic potential and Bloch Theorem, Semi conductors. CO-3 Elastic waves, Phonon, Phonon dispersion relations in monatomic and diatomic linear lattice, Dulong-Petit's law, Einstein and Debye's theory of specific heat of solids and limitations of these models, concept of Thermo electric Power. CO-4 Classification of Magnetic Materials, Weiss's Theory of Ferromagnetism, Super conductivity.

Course Outcomes B.Sc. Part III Chemistry

Course	Outcomes After completion of course the student will have understanding of -
Paper 1 **Inorganic Chemistry**	CO-1 : Classify acids and bases as hard and soft. Determine acid-base strength and emphasize theoretical basis of hardness and softness of acid, base. CO-2: Describe Metal-ligand bonding in transition metal complexes. Illustrate crystal-field splitting in octahedral, tetrahedral, square planar complexes, and factors affecting the crystal-field parameters. Differentiate magnetic behavior of transition metal complexes. determine magnetic moment data for 3d metal complexes. CO-3: Identity electronic spectra of transition metal complexes, distinguish various types of electronic transitions, predict spectroscopic ground states, Draw electronic spectrum of $[Ti(H_2O)_6]^{3+}$ complex, determine thermodynamic stability of metal complexes and factors affecting the stability, substitution reactions of square planar complexes. CO-4: classify organ metallic compounds. Illustrate properties and bonding in organ metallic compounds. applications of alkyls and aryls of Li, Al, Hg, Sn and Ti, nature of bonding in metal carbonyls. CO-5: Identify essential and trace elements to biological processes. Describe structure and properties of metalloporphyrins like hemoglobin and myoglobin. Emphasize biological role of alkali and alkaline earth metal ions. inorganic polymers: Silicones and phosphazenes.
Paper 2: Organic Chemistry	CO1: Describe basic concepts of 1H -NMR spectroscopy, illustrate nuclear shielding, deshielding, chemical shift and spin-spin splitting . determine coupling constants, Interpret

	NMR spectra of simple organic molecules , solve problems pertaining to the structure elucidation of simple organic compounds using spectroscopic data. Interpret acidity of alpha hydrogens in reactive methylene compounds, exhibit alkylation of diethyl malonate and ethyl acetoacetate. Synthetically apply ethyl acetoacetate and malonic ester. CO2:Draw molecular orbital diagram and determine aromatic characteristics of pyrrole, furan, thiophene and pyridine. Illustrate mechanism of nucleophilic substitution reactions in pyridine derivatives. Compare basicity of pyridine, piperidine and pyrrole. Describe preparation and reactions of indole, quinoline and isoquinoline . Illustrate mechanism of electrophilic substitution reactions of indole, quinoline and isoquinoline. CO3: Classify and name monosaccharides, Determine mechanism of osazone formation, Differentiate epimers and anomers. Interconvert glucose and fructose, exgibit chain lengthening and chain shortening of aldoses Differentiate erythro and threo diastereomers. CO 4: Classify amino acids. Determine acid-base behaviour of amino acids, Illustrate isoelectric point and electrophoresis. Classify proteins,determine peptide structure, analyze end-group in proteins. Analyze constituents of nucleic acids, nucleosides and nucleotides. CO 5: Illustrate structural features, methods of formation and chemical reactions of thiols, sulphonic acids, sulphonamides and Sulpha drugs. Identify synthetic polymers .Determine mechanism of Addition or chain-growth polymerization, free radical and ionic polymerizatio,t Condensation or step-growth polymerization. Illustrate applications of Polyesters, polyamides phenol-formaldehyde resins, Classify dyes. Chemistry and synthesis of methyl orange, congo red, malachite green, crystal violet, phenolphthalein, alizarin and indigo.
Paper 3: Physical Chemistry	CO1: Illustrate black-body radiation, Planck's radiation law, Compton effeét and photoelectric effect, Calculate heat capacity of solids, illustrate Bohr's model of hydrogen atom and its defects. Generalize De Broglie hypothesis, and Heisenberg's uncertainty principle, enumerate Sinusoidal wave equation. Derive Schrodinger wave equation. physical interpretation of the wave function, exhibit postulates of quantum mechanics, particle in a one dimensional box. Enumerate Schrodinger wave equation for H-atom and separate into three equations CO2: Interpret criteria for forming M.O. from A.O. construct M.O's by LCAO-H2 ion. calculate energy level from wave ftmctions, calculate coefficients of A.O.'s used in sp,sp2,sp3 hybrid orbitals. Exhibit valence bond model of H2, compare M.O. and V.B. models CO3: Analyse Electromagnetic radiation and spectrum, illustrate basic features of different spectrometers, state the

	Born-Openheimer approximation, calculate and differentiate degrees of freedom. Predict Rotational Spectrum of diatomic molecules, calculate spectral intensity. determine bond length, qualitatively describe non-rigid rotator, selection rules for pure vibrational spectrum, determine force constant and establish qualitative relation of force constant and bond energies, vibrational frequencies of different functional groups. Describe polarizability. predict pure rotational and pure vibrational Raman Spectra of diatomic molecules, Draw Potential Energy curves for bonding and antibonding molecular orbitals in electronic spectrum. qualitatively describe selection rules and Frank Condon principle. CO4 : Differentiate between thermal and photochemical processes. illustrate Grothus-Drappcr law, Stark -Einstein law.draw Jablonski diagram depicting various processes occurring in the exited sate.qualitatively describe fluorescence, phosphorescence. Interpret optical activity and polymerization. measure dipole moment by temperature method and refractivity method. Differentiate paramagnetism, diamagnetism and ferromagnetic. CO5: Illustrate the concept of Ideal and non-ideal solutions, express concentrations of solutions, Derive Raoult's law, determine relative lowering of vapor pressure, determine molecular weight from osmotic pressure. Calculate Elevation of boiling point, depression in freezing point. Calculate degree of dissociation and association of molecules.

Course Outcomes M.A. Geography

Course	Outcomes After completion of course the student will have understanding of
V- Advanced Geography of India	CO-1 Physical and cultural, demographic study of India
VI(b) Agricultural Geography	CO-1 Agricultural history and development CO-2 Agricultural models, typology CO-3 Agro climatic regions of Rajasthan policies.
VII (a) Urban Geography	CO-1 Importance, Nature and scope of Urban Geography, CO-2 Urban growth in India growth pole and growth centres. CO-3 Models, Satellite town of India, Master plans and principles of towns
VIII(a) Political Geography	CO-1 Definition scope nature, history and importance of political geography CO-2 Geopolitics theories, elements and idea of state. CO-3 Power concept of nation, buffer zone and economic development of world
VIII (g) Geography of Water Resources Their Managements and Utilization	CO-1 Scope. Nature and distribution of water recourses, ground water quality CO-2 Flood management and over exploitation of ground water CO-3 Methods of water conservation with special reference to India and Rajasthan

Course Outcomes M.A. Political Science

Course	Outcomes After completion of course the student will have understanding of
V- Modern Political Theory and Comparative Politics	CO-1 Shift from traditional to modern: Behaviouralism, Post Behaviouralism, systems theory (Easton) structural functional (Almond and coleman) CO-2 Political Modernization and Political Development, Political Socialization and Political Culture, Group Theory and Distributive Approach (Lasswell) CO-3 Types of government, organs of government, Party system, Pressure groups and Public opinion.
VI- Indian Government and Politics	CO-1 Constitutent Assembly, Fundamental Rights and Duties, Directive Principles, Federal system, The union executive-The President, Prime Minister and Parliament. CO-2 The Supreme court and judicial Review, Public interest litigation and judicial activism, Amendments, union state relations, office of the Governor, Regionalism and National integration CO-3 Political parties, election, voting behaviour, electoral reforms, caste class communalism and language secularism. Problem of minorities and social and economic. Role of media
VII Research Methodology	CO-1 Need and Nature of research in Political Science. Forms of research, The Scientific Method, Various forms of Studies Panel, Case, & Area CO-2 Formulation of Research Problem, Research Designs, Concepts and Hypothesis, Source of data, Sampling, Techniques of data-collection. CO-3 Concept of Property and Space, Coding and Tabulation, Data Analysis, Report Writing, Theory Building in Political Science.
VIII Modern Political Thought	CO-1 Idea's of Ram Mohan Roy, Dayanand Sarswati and Vivakanand CO-2 Idea's and contribution of Gopal Krishan Gokhale, B.G. Tilak, Aurvindo, V.D. Savarkar, Lajpat Rai and Deen Dayal Upadhyaya CO-3 Idea's and contribution M.K. Gandhi, J.L. Nehru, B.R. Ambedker, M.N. Roy and Vinoba Bhave
IX Gandhian Political Thought	CO-1 Evolution of Gandhi's ideas, truth, Ahinsa, Gandhian technique satyagraha CO-2 Fundamental ideas in Hind swaraj, Gandhian economics, ethics of economics and main economic formulations. CO-3 Gandhi's view of state and Government, Gandhian model of polity , Marx, Mao and Ghandi, Vinoba, Martin Luther king (Jr) and Gandhi, Gandhian frame work for peace and conflict resolution.

Course Outcomes M.A. Economic

Course	Outcomes After completion of course the student will have understanding of
Paper 1 PUBLIC FINANCE	CO-1 Nature and Scope of Public Finance, Role of government in the economic active Allocation, Distribution and Stabilization functions. Private, Public and Optimal Budgeting, Principle of Maximum Social Advantage, Public Expenditure, Wagner's Law, Theory of Social Goods, Effects of Public Expenditure on Production and Distribution. Public Revenue CO-2 Shifting and Incidence of taxes under Monopoly and perfect competition, Effects of commodity taxation on production,

	Effects of direct taxation on Production Progressiveness of a tax system and its measurement, Theory of Public Debt, Fiscal Policy, Main trend in the revenue of the Central and State Government in India.
Paper 2 INTERNATIONAL ECONOMICS	CO-1 The Law of Comparative Advantage, Classical Theory of Comparative Advantage, Views of Adam smith, Mill. Haberler and Ricardo, The standard theory of trade, General Equilibrium of trade, Factor Endowments and Heckscher-Chin Theory Factor Price Equalization, Stolper Samuelom theorem, Ryberynski Theorem, Empirical Tests of Ricando and Heckscher Ohlin Theories Complementary de theories Economic Growth and International Trade: Growth of factors of production, Technical progress CO-2 Free Trade versus Protection Tariff (Partial equilibrium effects, Optimum Tariff), Other Trade Restrictions (Quota, Quota versus tariff, Non-tariff barriers and the new protectionism). The Political Economy of protectionism and Strategic Trade Policy. Economic- Integration-Theory of Customs Union, Regional Trading Blocks. CO-3 Foreign Exchange Market: Functions, Foreign Exchange risks, Hedging Speculation Arbitrage, future and Options, Exchange Rate and Exchange determination theories, Spot and Forward rates, Purchasing Power Parity Theory, Monetary approach and Portfolio approaches of exchange rate determination, Euro Currency Market Balance of payment Accounting, Causes of disequilibrium and remedies, Devaluation and Marshall-Lemer condition, Elasticity and Absorption approaches. Fixed and Flexible Exchange Rates- Case for and against fixed/flexible rates, Adjustment under gold standard, Price specie flow Mechanism.
Paper 3 DEVELOPMENT ECONOMICS	CO-1 Meaning and Measurements of economic development and human development structural fees and process of change empirical studies of Kuznets, Denison & Chenery; Ingredients of development- Land, Physical capital, Labour and Human Capital, Technological Change Scale, Organization, Growth Models- Ricardo, Marx (Classical), Harrod - Domar, Solow (Neo- Classical), Lewis Model and the Renis - Fei Extension. CO-2 Development Planning: Balanced and Unbalanced strategies, Choice of techniques, Capital Output ratio, Investment criteria; NPV, IRR, Social Cost Benefit Analysis Accounting Prices, Applications of Input-Output Analysis in Planning, Pr Programming approach of Planning. CO-3 Financing of economic development; Domestic and external resources, International trade and development Two-gap models, Plan Models of India. Past Performance and current issues of Indian Planning.
Paper IV Advanced Indian Economy	CO-1: Natural Resource in India- land, Water, Forest and Minerals, Composition, Quality and Growth Trends. Characteristics of I through Recent Census, Population Policy and Economic Effect Pressure, Poverty, Unemployment and Human Development during plan period- Appraisal of Government Measures, India's Human Development Perspective, Agricultural Development in India: Institutional Aspects- land reforms, Green Revolution, Technological Aspects- Agricultural input and Shin Function, Agricultural Cost and Price Policy, Agricultural Marketing Policy and Security, Subsidy and Public

	Distribution System, Cap Indian Agriculture, Problems in Agriculture- A Need for Second Green revolution. CO-2: Industry - Strategy of Industrial Development and Industrial Policy reforms, small scale and Cottage Industries, Reservation Policy Relating to Small Sources of Industrial Finance - Banks, Share Market, Insurance C funds, Non-Banking Sources and FDI, Role of Foreign Capital for and Portfolio Investment, Public Sector Reforms, Privatization and I Foreign Trade: Salient Features, Trends, Composition, Direction Trade Reforms, liberalization and Recent Changes in Trade Policy Impact on Indian Economy, WTO - Issues and its Impact on Indian Balance of Payment Position in Recent Years. CO-3: Economic planning: Goals, Achievements and Shortcomings of Planning and the market. Subsidy Policy and Problems, Nation Income, Regional Distribution, Income Inequalities in India, New Economic Policy - LPG and Second Phase of Economic Development in India - Physical Infrastructure (Power. Transport and Irrigation) and Social Infrastructure (health and education), SE as Part of Financial Inclusion, New Trends: Mudra Banking, Cashless.
Paper 5 INTERNATIONAL FINANCE	CO-1: Finance Function- Sources and Uses; International capital movements - classification and role in developing nations. Foreign Direct Investment, foreign Portfolio investment and financial instability. International Financial System and Globalization- development in Exchange, Eurocurrency Markets, Asian Dollar Markets and International Markets Principles of International Financial Management. CO-2: Foreign Exchange Market- Structure, Kinds, instruments of payments, exchange trading, exchange risk, arbitrage and speculation. Foreign exchange rate- meaning, determination of equilibrium exchange rate, theory of exchange rate and exchange rate systems. Balance of payments- meaning, components, disequilibrium of BOPs, its cause, Remedial measures. Open Economy Macro Economics- BOPS equilibrium and adjustment mechanism (automatic and policy). Trends in India's Balance of payments and growth of foreign exchange since the beginning of the 1990s. CO-3 : Global Business Finance; Long term borrowing from World Bank, Development Bank and its overall impact on Indian economy Internat. Monetary System and alternative international monetary standards. IMF and prom of international liquidity. Optimum currency areas. Theory of international reserves. WTO and its impact on different sectors of the economy. Regional Multilateralism and World Trading System.
Paper 6 LABOUR AND INDUSTRIAL RELATIONS	CO-1 : Labour Economic - Importance, Old and new theories, Theoretical and institutional labour Economics; Theory of individual labour supply and demand for labour; Wage determination Functions and Characteristics of labour market with special reference to developing economies. Non competing groups and segmentation in labour markets, Rural labour market and rural- urban migration; Todaro Harris hypothesis; Investment in rural capital. Definition of working force and labour force; Concept of Unemployment and Under employment; Types of unemployment, Estimates of unemployment in India and Rajasthan. Employment in organized and industrial sectors in India-its size, growth and

	characteristics. CO-2 : Government and labour market, Labour legislation and social security, State reputation of wages; Minimum wages for industrial and Agricultural workers, Wage and income policy. Labour Unions - their role and functions; Labour unions and collective bargaining economic impact of unions. Trade Union movements in USA, Russia and India, Industrial relations- factors determining industrial relations; Collective bargaining in India. CO-3 : Industrial disputes and grievances, causes of unrest, Machinery for industrial peace; Conciliation, mediation and arbitration, Industrial disputes in India since 1980, Critical study of existing machinery of industrial relations in India. Workers participation in ownership and management-concepts and Indian experience, Industrial Labour Organization- functions and role, India and ILD. Industrial Labour and Industrial Relations in Rajasthan.
Paper 7 ENVIRONMENTAL ECONOMICS	CO-1 : Concept of Sustainable Development. The Environmental Costs of Development; Economic Growth and Environment; Environmental Kuznets Curve (EKC); The Nature of Environmental Goods; Market Failure and Public Policy; Theory of Extremities and Public Goods. Renewable Resources: Optional Management of Resources, Non Renewable Resources Hotelling's rule. Resource Scarcity and Economic Growth, Population Growth, Technological Changes and Implications for Long Term Growth. CO-2 : Environmental Values: Values, Non-Use Values and Option Values. Environmental Valuation: Contingent Valuation Method, Travel Cost Method, Hedonic Pricing Method Valuing Environment as input in Production: Production Function, Cost Function. Conventional National Income Accounts and Environment: Concept of Green GDP. CO-3 : Environmental Policy Instruments, Property Rights and Transaction Costs, Quantitative Regulations, Price Instruments to Correct Externalities, Pollution Taxes and Abatement Subsidies, Transferable Permits/Pollution Markets, Innovative Approaches to Control Environment Pollution.

Course Outcomes M.A. History

Course	Outcomes After completion of course the student will have understanding of
Paper I ANCIENT INDIAN HISTORY (200 BC. TO 750 A.D.)	CO1: A survey of the sources for ancient Indian history from c. 2 B.C. to 750 A.D. Political and Cultural history of the Sungas, King Kharavela of Kalinga and his achievements. Origin and early history of the Satavahanas upto Satkarni, Rise of the Kushanas: Kanishka- date, political and cultural achievements, Early history of the Sakas in India Western Kshatrapas- Nahapana and Rudradaman 1 and thei achievements. Economic condition of India from 200 B.C. to 300 AD with special reference to Trade and Commerce. A study of the social religious life and developments in art and architecture, literature and education during the period c. 200 B.C. - 300 A.D. CO2: Rise of the Imperial Guptas - Origin and early history. Expansion and consolidation of Gupta empire under Samudragupta and Chandragupta IL Nature of Gupta state

	and administrative organisation. Hunà invasion and its impact. Decline of the Gupta empirc. Survey of social and religious life during the Gupta age Economic conditions of the Gupta period - Land grants, agriculture, crafts, coinage and currency. Developments in art and architecture, literature and sciences during the Gupta age. CO3: Harshavardhana - his conquests, administration and cultural achievements. Emergence of Feudalism. Accounts of Fahien and Yuan-Chwang. Political and cultural achievements of Pallavas and Chalukyas upto 750 A.D.
Paper II (i) Social and Economic Life in Ancient India	CO1: Concept of Dharma as the basis of Indian Society. Concept, origin and a historical-cultural study of Varna and Jati. Ashramas, Purusharthas and Sanskaras - Objective, types and significance: concept and prevalence of asceticism in ancient India. Institution of family and Marriage. CO2: A survey of the position of Women in ancient India. Education-a survey of the evolution of Vedic, Buddhist and Jaina systems of education. Ancient Indian economic thought: meaning and significance of Varta. Economic systems and institutions: Land ownership; Land revenue and other forms of taxation; Feudalism -a brief survey of the debate over Feudalism in India; Economic guilds; Credit and Banking, slavery and labour. CO3: Stages in ancient Indian economy: Chalcolithic village economy, Harappan economy. Vedic agriculture. Urban and Industrial economy during the age of Mahajanapadas. Mauryan Imperial Economy. Trade commerce during the period c. 200 B.C. to 300 A.D. Economic progresss in the Gupta period. South Indian temple economy
Paper III(i) Ancient Indian Art and Architecture	CO1: Characteristics of Indian Art Prehistoric Rock Art. Indus Saraswati civilization: town planning and architecture, sculptures and seals. Mauryan Art: Pillars and Folk Art (Yaksha sculptures). A study of art and architecture of Stupas at Bharhut, Sanchi and Amaravati. Mathura School of Art. Gandhara School of Art. CO2: Buddha image. Gupta art - a study of sculptures, Ajanta paintings. CO3: Origin, evolution and many styles of Hindu Temples-development of temples in post-Gupta period. Northern India- Temples of Orissa, Khajuraho and Abu. South India-Rock cut temples of Mahabalipuram, Kailash temple of Ellora and Chola temples
Paper-IV: (v) INDIAN NATIONAL MOVEMENT AND THOUGHT	CO1: Approaches to Indian Nationalism - Conceptual debates Emergence of organized nationalism. Political Associations and the Indian National Congress. Contribution of Moderates and Extremists to the National Movement. Swadeshi Movement. Home Rule Movement Constitutional Developments upto 1919. Role of Terrorists and Revolutionaries with Special Reference to Chandra Shekhar and Bhagat Singh. CO2: Rise of Gandhi. Gandhi's career, ideology and methods of mass mobilisation. Nature of Gandhian Movements Non-Cooperation movement, Civil Disobedience Movement and Quit India Movement The Left Movements - Socialists and Communists. States' Peoples Movements. CO3: Growth of Separatism - Aligarh Movement, Muslim League Hindu Mahasabha. Subhash Chandra Bose and the Indian National Army. Peasants and Workers' Movements. Depressed Classes Movements. Women in the Indian National Movement.The Act of 1935. Communal Politics

	and Partition. Transfer of Power and Indian Independence (15 August, 1947).
Paper V Main Trends in the History and Culture of Rajasthan	CO1: Geographical Features of Rajasthan and their Impact on it History and Culture. Advent of man of prehistoric cultures in Rajasthan. Hub of Chalcolithic and Copper age cultures in Rajasthan (Alwar, Balathal, Ganeshwar) Rock Art in Rajasthan. A brief survey of historic Rajasthan from B.C. 600-700 A.D.-Matsya Janapada, Republican Tribes, Origin of the Rajputs. Guhilas of Medapata. Political and Cultural Achievements of Gurjar-Pratiharas and Chakamanas. CO2: Rajput Resistance to Mughal invasions. Political and Cultural Achievements of Maharana Kumbha and Sanga. Estimate of Maharana Pratap. Contribution of Maldeo of Marwar. Role of Chandrasen. Emergence of Amber Principality as a Major State in Rajasthan: Mirja Raja Jai Singh, Sawai Jai Singh. Religious Movements: Mirabai, Dadu Panthis, Folk deities. Art and Architecture: Forts, Temples, Sculptures, Rajput Schools of Painting. CO3: Maratha influence in Rajasthan. Acceptance of British Dominance and its Consequences. Administrative and Judicial Changes after 1818. Social Changes - Prohibition of Female Infanticide and Sati Economic Changes, Land Revenue Settlements. British Monopoly of salt and Opium Trade Echoes of 1857 outbreak in Rajasthan. Agrarian unrest and Movements. Tribal Movements. Formation of Raj Mandals, influence of Nationalism and Freedom Struggle in Rajasthan. Economic developments in post-independence Rajasthan. Cultural Profile of Rajasthan - Rajasthani Language, Dance and Literature; Folk Arts and Handicrafts, Fairs, Festivals, Custom Dresses and Ornaments, Developments in Music, Dance and Theatre.

Course Outcomes M.A. Hindi

Course	Outcomes After completion of course the student will have understanding of -
प्रथम प्रश्न पत्र .– हिन्दी गद्य (नाटक, निबंध एवं आलोचना)	CO-1 -अंधेरी नगरी – भारतेन्दु हरिशचन्द CO-2- स्कन्दगुप्त – जयशंकर प्रसाद CO-3- माधवी – भीष्म साहनी CO-4-आठवा सर्ग – सुरेन्द्र वर्मा निर्धारित निबंध, आलोचनात्मक निबंध
द्वितीय प्रश्न पत्र – प्राचीन एवं निगुर्ण काव्य	CO-1 –पृथ्वीराज रासो – चंदवरदाई, कैमास करनाटी प्रसंग CO-2- विद्यापति : डॉ. शिवप्रसाद सिंह, CO-3- जायसी ग्रंथावली CO-4- कबीर : आचार्य हजारी प्रसाद द्विवेदी
तृतीय प्रश्न पत्र – भाषा विज्ञान	CO-1 –भाषा : अर्थ, महत्व, विशेषताएं, भाषा के विविध रूप, भाषा विज्ञान से तात्पर्य, ज्ञान की अन्य शाखाओं से संबंध,भाषा विज्ञान के विविध अंग CO-2- अर्थ, ध्वनि एवं रूप परिवर्तन के परिवर्तन के कारण, CO-3- प्राचीन एवं मध्यकालीन भाषाएं– आर्य, द्रविड, वैदिक, संस्कृत एवं पुरानी हिन्दी, हिन्दी की उप भाषाएं एवं बोलियां CO-4- हिन्दी व्याकरण का इतिहास, विकास एंव विशेषताएं CO-5- लिपि और भाषा का इतिास एवं संबंध – चित्रलिपि, भावलिपिए ध्वनिलिपि, ब्राह्री लिपिए देवनागरी लिपि
चतुर्थ प्रश्न पत्र –आधुनिक काव्य	CO-1- कामायनी : जयशंकर प्रसाद CO-2- राग विराग : डॉ. रामविलास शर्मा CO-3- आंगन के पार द्वार : अज्ञेय CO-4-चांद का मुँह टेढा है

	CO-5-आत्मजयी : कुँवरनारायण
पंचम प्रश्न पत्र (क) (6) प्रेमचन्द	CO-1- कुछ विचार (निबंध) CO-2- मानसरोवर (प्रथम खण्ड) CO-3-रंगभूति CO-4-गबन

Course Outcomes M.Sc. Botany

Course	Outcomes After completion of course the student will have understanding of
Paper-VII Plant Morphology, Developmental Anatomy and Reproductive Biology	CO-1: Metabolism of proteins and mobilization of food reserves, tropisms during seed germination and seedling growth, hormonal control of seedling growth. Control of call division and Cell to cell communication in shoot apical meristem, Primary and Secondary tissue differentiation specially xylem and phloem, Secretary ducts and laticifers. CO -2: Phyllotaxy, differentiation of epidermis, kranz anatomy, Leaf traces and leaf gaps. CO-3: vegetative and Sexual reproduction, flower development, mutants in Arabidopsis and Antirrhinum.Structure of ovule and anther, their developmental process, pollen-pistil interaction and fertilization. CO-4: fruit and seed development, embryogenesis, polyembryony, Apomixis, biochemistry and molecular biology of fruit maturation. Senescence and programmed cell death.
Paper-VIII :Plant Ecology	CO -1: Population Ecology, exponential growth, dynamics, pattern, fertility rate and age structure. Concept of community, habitat and ecotone, ecological niche. CO-2: Cyclic and non-cyclic changes in vegetation development, mechanism of ecological succession, succession models. Components of ecosystem, Ecological energetic, solar radiations, Productivity of various ecosystems, biogeochemical cycles of nitrogen and carbon. CO-3 :Natural and Anthropogenic Ecological perturbations, Restoration of degraded ecosystems, Environment Impact Assessment, Major biomes of the world and impact of changing climate on biomes, Biodiversity and its role in ecosystem, Biodiversity Act of India and related International conventions. CO-4 : Ex- situ and in-situ conservation management, sustainable development, molecular ecology, genetic analysis of single and multiple population, behavioural genetics and conservation genetics, sources of energy, fossil fuel, wind power, geothermal, tidal and wave energy, conservation.
Paper-IX : Plant Resource Utilization and Conservation	CO-1: Concept of biodiversity, status in India, Sustainable development, Origin of agriculture, world centres of primary diversity of domesticated plants, plant introduction and secondary centres. CO-2: Origin, evolution, botany, cultivation and uses of food, forage and fodder, fibre, medicinal, aromatic and vegetable oil-yielding crops. CO-3 : Important fire-wood and timber-yielding plants and non wood forest products (NWFPs) such as bamboos, rattans, raw materials for paper making, gums, tannins, dyes, resins and fruits. Green revolution - its benefits and adverse consequences, Principles of conservation, extinctions, environmental status of plants based on IUCN. C0-4: Sanctuaries, National parks, biosphere reserves, wetlands,

	mangroves and coral reefs, conservationn of wild biodiversity.
Paper-X: Biotechnology: Basic principles and Scope	CO-1: History and scope of biotechnology, Concept of Cellular differentiation, totiopotency, morphogenesis, androgenesis and somatic embryogenesis and Organogenesis. CO-2: Somatic hybridization, protoplast isolation, fusion and culture, hybrid selection, regeneration, achievements and limits, artificial seeds, production of hybrids and somaclones and secondary metabolites, cryopreservation and germplasm storage, Recombinant DNA technology, construction of genomic/ cDNA libraries, DNA synthesis and sequencing, Polymerase Chain Reaction, DNA fingerprinting. CO-3 : Genetic engineering of plants for transgenics, T-DNA and transposon mediated gene tagging, Intellectual Property Rights, ecological risks and ethical concerns. Bacterial transformation, Selection, genetic improvement of industrial microbes, nitrogen fixers, fermentation technology. CO-4 : Genetic and physical mapping of genes, molecular markers for introgression of useful traits, artificial chromosome, high throughput sequencing techniques, genome projects, bioinformatics, functional genomics, microarrays, protein profiling and its significance. Bioactive compounds- alkaloid, antioxidants, flavonoids, protiens and terpenoids.
Paper-XI: Ecosystem Ecology	CO-1 : characteristics of grasslands, stratification, grazing and drought, grassland and animal life, grassland types with special reference to Prairie, Savannah and Indian grasslands. Stratification of forests, forest types- Boreal, Temperate and Tropical, forest animal life. Fresh_water, marine and Esturine ecosystems, their characteristics, types, zonation/ stratification, flora, fauna and productivity. CO-2 : Urban ecosystem and climatic conditions, flora- fauna (human beings as largest macro consumer), problems of air pollutants, drinking water supply, floods and Waste disposal.Rural ecosystem - Rural environment and climate, flora and fauna, problems of discharge of chemical fertilizers, pesticides and drinking water, waste management, principle, social forestry. CO-4: Desert Ecosystem: Classification, physiography, flora, fauna and water, formation, topography ,world deserts. Thar Desert- Sand dunes, types, Origin, morphology. Vegetation types and plant communities, biological production, wild life, succession in vegetation of Western Rajasthan, coastal sand dunes, economic importance of desert plants. Saline Ared Zones- plants of saline arid zones(halophytes), economic and Social considerations in the management of salt affected soils, afforestation in salt affected Soils, Importance of haloplaytes.
Paper-XII : Environmental Biology	CO-1: Air Pollution: Important Primary Particulates, Odour Producing compounds and secondary Air Pollutants, Primary phyto chemical reaction, Biomonitoring, Greenbelt, Ozone depletion control strategies. CO-2 : Water Pollution: Eutrophication- process and control, oil pollution, thermal pollution, heavy metal pollution, recycling of wastewaters. Solid waste management and resource recovery,Solid waste types, 3Rs (Reduction, Recycle and Reuse), methods of disposal-Land fill, Open dumps, hazardous waste disposal and management. CO-3: Greenhouse gases and their effects, fertilization, global warming, sea level rise.

Course Outcomes M.Sc. Mathematics

Course	Outcomes After completion of course the student will have understanding of
I Analysis and Advanced Calculus	CO-1 Subspace of metric space, product space, continuous mapping CO-2 Normed linear spaces, quotient, bounded linear transformation. CO-3 Equivalent norms, Basic properties of finite dimensional normed. CO-4 Inner product spaces. Hilberts space and its properties, Hilberts space, Riesz representation. Reflexivity of Hilberts spaces.
II Viscous Fluid Dynamics	CO-1 Viscosity, analysis of stress and rate of starin. Stokes law of friction. CO-2 Exact solution of Navier- stocks equations, velocity distribution for plan coquette flow plane poiseuille flow. CO-3 Stagnation point flows: Hiemenz flow Homann flow CO-4 Equation of energy Temperature distribution : Between parallel plants in a pipe. CO-5 Theory of very slow motion, stokes and Oseen's flows past a sphere.
V Mathematical Programming	CO-1 Separating and suppoting hyperplane theorems, revised simplex method for LPP CO-2 Integer programming Gomory's algorithm for all integers programming problem CO-3 Non-linear programming problem (NLPP) and its fundamentals ingredients. CO-4 Khun-Tucker condition for optimization for NLPP. CO-5 Dynamic Programming principles of optimality due to Bellman.
VIII –Integral Transforms Integral Equations	CO-1 Laplace transforms –Definition and its properties, rules of manipulation. CO-2 Fourier transforms - Definition and its properties of Fourier sine. cosine and complex transforms. CO-3 Infinite Hankel transform – Definition and elementary properties. Hankel transform of derivativers. CO-4 Linear integral equations - Definition and classifications. CO-5 Solutions of Volterra integral equations of second kind with convolution type kernels by Laplace transform
IX Relativity and Cosmology	CO-1 Relative character of space and time, principle of relativity and its postulates. CO-2 Variation of mass with velocity, Equivalence of mass and energy. CO-3 Principles of Equivalence and general covariance. Geodesic postulates. CO-4 Three crucial test in general Relativity and their detailed descriptions CO-5 Lorentz invariance of maxwell's equation and their tensor form, Lorentz for on charged partical.

Course Outcomes M.Com Accountancy & Business Statics

Course	Outcomes After completion of course the student will have understanding of
Paper IV Goods and Service Tax (GST) in Centre States	CO-1 Introduction of GST, IGST Act, 2017 Definition, Benefits, Constitutional Aspects and Legal Framework of GST Including CGST, IGST, SGST and UTGST. CO-2 Identification of Nature of Supply- Inter State and Intra State Supply, Continuous Supply and Zero Rated Supply, taxable and Non-taxable Supply Exemptions, Composite Schemes of GST, Applicable Rates of GST

	CO-3 Concept Relating to Input Tax Credit and Computation of Input Tax Credit CO-4 Procedure of Registration Under GST, Maintenance of Books and Records, Filling of Returns, Computation of GST, Payment of Tax, Reverse Charge, Refund of Tax CO-5 Administration of GST Regime, Assessment, Demand and Recovery, Inspection, Search, Seizure, Provisions to offences and Penalties
Paper V Advanced Accounting	CO-1 Double Account System (Including accounts of electricity Companies) CO-2 Accounting for Insurance Companies CO-3 Valuation of Goodwill & Valuation of Share CO-4 Accounting for corporate Restructuring an Introduction, Internal Reconstruction and Amalgamation CO-5 Consolidate Financial Statements, Consolidate procedure, Consolidate with two or more subsidiaries. Liquidation of Companies.
Paper VI Management Accounting and Financial Reporting	CO-1 Tools of Financial Analysis- Ratio Analysis and cash flow Analysis, Capital Structure Determinants, Capital Structure Theories. CO-2 Working Capital Management, Estimation of Working Capital Requirements, Inventory Management, Receivable Management, Cash Management CO-3 Corporate Financial Reporting – Meaning, Need, Developments, Issues and Problems in Corporate Financial Reporting with Special Reference to published CO-4 Developments in Financial Reporting- values Added Statements, Economics Values Added, Market Values Added and Shareholders Value Added CO-5 Recent Developments in Financial Reporting- System- social Accounting, Human Resource Accounting and Inflation accounting.
Paper I Tax Planning	CO-1 Tax Planning and Management, Concept and Problems of tax Planning CO-2 Capital Gain & Tax Planning, set off and carry Forward of Losses and Tax Planning with Investments. CO-3 Tax planning and Form of Organization Diversion of Income and Tax Planning CO- 4 Tax Planning for Industrial Development and Financial Management CO-5 Tax Planning and Managerial Decisions.
Paper I Cost Analysis And Cost Control	CO-1 Objectives of Cost accountancy, Techniques of Cost accounting, Cost control and decision making preparation of cost reports. CO-2 Employees Cost Analysis- Payment of salaries compensation and bonus to managerial personnel including directors, profit sharing plans to executive, cost analysis for labour and executive, turnover. CO-3 Statistical and OR application for cost control in certainty, uncertainty and risk, Model for inventory stock and Responsibility accounting and profit centre transfer pricing. CO-4 Budgetary Control- Meaning and concept of budget and budgeting, New cost concepts, Activity based costing. CO-5 Standard Costing variance analysis related to material, labour, overhead, sales and profits variances.

Course Outcomes M.Com Business Administration

Course	Outcomes After completion of course the student will have understanding of
Paper I Human Resource Management	CO-1 Function role and policies CO-2 Main power job analysis HRD, Induction and training CO-3 Merit rating, Executive development, carrier planning, job evolution CO-4 Motivation and morale, Employee leadership, Human and organisation conflicts, Industrial psychology, Solving labour Problem. CO-5 Spherion, layoff- retrenchment, dismissal, displacement and discharge
Paper II Marketing management	CO-1 Nature and scope, importance of marketing, marketing environment, product planning brand and trademarks, labelling product line policy, product life cycle CO-2 Marketing research, nature and importance area techniques. Model of consumer behaviour and motivation research. Channels of distribution. CO-3 Factor objective, break even analysis, sales forecast, market segmentation CO-4 Sales Promotion Mix determine the sales promotion programme CO-5 Control of marketing operations, Need for control, phase of control, Marketing audit, Marketing of service
Paper III Industrial Relation and Social Security	CO-1 Concept of Industrial relation, Trade unionism, Labour administration in tripartite. CO-2 I.L.O. organization and impact on labour legislation. CO-3 Law relating, Trade unions, industrial dispute, minimum wage CO-4 Social Security's concept, social insurance and social assistance CO-5 Law relating to social security's, employees state insurance, provident fund and pension,
IX Marketing Research	CO-1 Definition and nature. purpose and importance of marketing research CO-2 Technique of Marketing research, panel , brand, barometer CO-3 Motivational research, adverting research, new product research planning the general research CO-4 Questionnaire desining collection of data tabulation of data CO-5 Analysis of data interpretation and report writing
X Advertising Management	CO-1 Meaning and role of advertising CO-2 Types of advertising decisions. Organisation of advertising department CO-3 Advertising media, types of media, advertising budget, planning and execution of advertising campaign CO-4 Measuring advertising effectiveness, Need and scope of advertising CO-5 advertising ethics laws effecting advertising in India, Industrial advertising

Course Outcomes M.Com Economic Administration & Financial Management

Course	Outcomes After completion of course the student will have understanding of
Paper I Economic Administration &Policy	CO-1 The Concept of Economic Administration CO-2 Present Economic Policies and Planning CO- 3 Administration of Financial Resources CO-4 Present Finance Commission CO-5 Financial Administration of the Indian Union

Paper II Cooperative Sector Management	CO-1 Definition and principles of management, Concept of Co-operative Management CO-2 Professionalization of Co-operative Management CO-3 Leadership in Co-operatives CO-4 Concept of Cooperative Education and Co-operative Training CO-5 Role of Institutional frame work of co-operative education and training
Paper III Indian Banking System	CO-1 Structure of Indian Banking System CO-2 Private sector banks in India CO-3 Social control over banks, Nationalisation of banks CO-4 State Bank of India CO-5 Rationale and objectives of financial reforms
EA Group – IV Economic Environment in INDIA	CO-1 Economic Environment CO-2 Economic Policies CO-3 Significance of Agriculture in Indian Economy CO-4 Foreign Trade CO-5 Indian Economic Problems
EA Group V-Development Economics	CO-1 Nature and importance of economic development CO-2 Innovation and Development CO-3 Infrastructure development CO-4 Foreign Investment and Economic Development CO-5 Fiscal Developments and Public Finance for accumulation of capital and acceleration of growth
FM- IV International Banking	CO-1 International Banking CO-2 Study of International Monetary and regional financial institutions. CO-3 The l.M.F CO-4 The London, New York and Singapore Money Markets, Features and Characteristics. CO-5 Off Shore banking
FM- V- Bank Management	CO-1 The banking structure in India. CO-2 Central banking system. CO-3 Non-performing assets.(NPA) CO-4 Marketing of banking services. CO-5 Quality circles in banks.

Course Outcomes M.Sc. Zoology

Course	Outcomes After completion of course the student will have understanding of -
Paper-1: Biology Of Chordates	1: Origin, Evolution and Adaptive radiation of Chordates CO-2: Organogenesis in Chordates CO-3: Embryonic Adaptations CO-4: Metamorphosis in Amphibia CO-5: Regeneration in Chordates
Paper II : Environmental Biology and Ethology	CO-1: Interaction between Environment and Biota CO-2 : Ecosystem Dynamics and Management CO-3 : Organisation and Dynamics of Ecological Communities CO-4 : Mechanism of Behaviour and Evolution CO-5 : Social Organization and Orientation
Paper III Genes and Differentiation	CO-1: Introduction to animal development and creating multicellularity CO-2 : Early Vertebrate Development CO-3 : Cytoplasmic determinants and cell specification CO-4 : Body Axes and Homeobox concept CO-5 : Environmental evolution and Development CO-6 : Cell diversification in early embryo CO-7 : Hemopoietic Stem cells
Paper 4: **Tools and Techniques in Biology**	CO1: Principals and Applications of Different Types of Microscopies CO2: Principals and Applications of Ultracentrifugation, Chromatography, Electrophoresis CO3: Principals and Applications of Radiation technologies CO4: Principals and techniques of Genetic Engineering CO5: Principals and Techniques of Embryo Technology CO 6: Cell Culture and Cryo techniques.
Paper 5: **Environmental Biology :Environmental Science and Ecological Principles and Wildlife Conservation**	CO1: Biomes CO2: Community Dynamics CO3: Restoration Ecology CO4: Dynamics of Population CO5: Biodiversity conservation
Paper 6 : Ecotoxicology, Evironmental Microbiology and Biotechnology	CO1: Environmental health and toxicology CO2: Biogeochemical cycles CO3: Biodeterioration control and Soil, Water and Waste management CO4: Microbial Interaction with Xenobiotic and Inorganic

	Pollutants CO5: Biodegradability and testing of Xenobiotic and Inorganic Pollutants CO 6: Microorgaisms in mineral and energy recovery and Fuel and mass Production CO 7:Microbial Control Of Pests

Course Outcomes M.Sc. Physics

Course	Outcomes After completion of course the student will have understanding of -
Paper-1 **ADVANCED QUANTUM MECHANICS AND TRODUCTORY QUANTUM FIELDTHEORY**	CO-1 Scattering(non-relativistic): Differential and total scattering cross section, Relativistic Formulation and Dirac Equation CO-2 Dirac equation for a free particle Symmetries of Dirac Equation CO-3 The Quantum Theory of Radiation CO-4 Scalar and vector fields CO-5 S-matrix
Paper-2 **NUCLEAR PHYSICS**	CO-1 Nucleon-Nucleon Scattering and Potentials General features of two-body scattering at high energy Effect of exchange forces. CO-2 Two Nucleon system and Nuclear Forces Experimental Technique. CO-3 Nuclear shell model Collective nuclear models CO-4 Interaction of radiation and charged particle with matter(No derivation) CO-5 Nuclear gamma and beta decay General characteristics of weak interaction; nuclear beta decay and lepton capture
Paper III STATISTICAL AND SOLID STATE PHYSICS	CO-1 Basic Principles, Canonical and Grand Can conical ensembles. CO-2 Partition functions and Statistics CO-3 Band Theory: Block theorem, Kronig Penny model, effective mass of electrons Semi conductors CO-4 Theory of Metals Lattice Vibratuibs and Thermal Properties. CO-5 Magnetism: Larm or diamagnetism. Paramagnetism, Curie Langevin and Quantum theories Super conductivity
Paper-4 MICROWAVEEL ECTRONICS	CO-1 Introduction to microwaves and its frequency spectrum, Application of microwaves. Wave guides Resonators CO-2 Ferrites Microwave Measurement CO-3 Microwave tubes Magnetrons Gyrotrons CO-4 Avalanche Transit Time Device Transferred Electron Device Passive Devices Parametric Amplifiers. CO-5 Microwave Antennas. Microwave Communication Satellite Communication

Course Outcomes M.Sc. Chemistry

Course	Outcomes After completion of course the student will have understanding of -
Paper-1: **Applications of Spectroscopy, Photochemistry and Solid state Chemistry**	CO-1: Ultraviolet and Visible Spectroscopy CO-2: Mossbauer Spectroscopy CO-3: NMR Spectroscopy CO-4: Photochemical Reactions CO-5: Solid State Reactions
Paper-2: Bioinorganic Chemistry, Bioorganic Chemistry and Biophysical Chemistry	CO-1: Metal Ions in Biological Systems CO-2: Bioorganic Chemistry CO-3: Co-enzyme Chemistry CO-4: Bioenergetics
Paper-3: **Environmental Chemistry**	CO-1: Atmosphere CO-2: Air Pollution CO-3: Aquatic Chemistry and Water Pollution CO-4: Environmental Toxicology CO-5: Soil and Environmental Disasters
Paper 4: **Organic Synthesis-I**	CO-1: Organ metallic Reagents CO-2: Oxidation Introduction CO-3: Reduction Introduction CO-4: Rearrangements CO-5: Metallocenes , Nonbenzenoid Aromatics and Polycyclic Aromatic Compounds
Paper 5: **Organic Synthesis-II**	CO-1: Disconnection Approach CO-2: Protecting Groups CO-3: Two Group C-C Disconnections CO-4: Two Group C-C Disconnections Use of 1,2-; 1,4- and 1,6-difunctionalised compounds in ring synthesis. CO-5: Ring Synthesis
Paper 6: **Heterocyclic Chemistry**	CO-1: Nomenclature of Heterocycles CO-2: Non-aromatic Hetero cycles CO-3: Small Ring Hetero cycles CO-4: Meso-ionic Hetero cycles CO-5: Six Membered Hetero cycles with Two or More Hetero atoms
Paper 7: **Chemistry of Natural Products**	CO-1: Terpenoids and Carotenoids CO-2: Alkaloids CO-3: Steroids CO-4: Plant Pigments CO-5: Prostaglandins

B.Com Part III

Course Outcomes of Business Administration

On studying this course the student will be able to have a clear understanding of:

Paper I **Functional Management**	CO1: Human Resource Management CO2: Job Analysis, Job Enlargement and Job Enrichment CO3: Marketing-Meaning, Evolution, Modern Importance, CO4: Concept, scope and Development , Marketing Pricing Policies and Finance Functions CO5: Meaning , Nature, Scope and Importance of Production Management
Paper II **Advertising and Sales Management**	CO1: Advertising concepts CO2: Advertising Message CO3: Budget, Advertising campaign Planning CO4: Role of selling in a Planned Economy CO5: Qualities of Customer salesman; Planned Selling Approach, Role and Functions of Human Resource Management, organisation of Human Resources Department, Human Resource Planning

B.Com Part III

Course Outcomes of Accountancy and Business Statistics

On studying this course the student will be able to have a clear understanding of:

Paper I **Auditing and Management Accounting**	CO1: Auditing: Meaning, Objects, Fraud and Errors, Relationship in between Book-Keeping ,Accounting and Auditing CO2: Vouching, Verification and Valuation of Assets and Liabilities CO3: Company Auditor: Audit and Auditors CO4: Management Accounting CO5: Financial Statement Analysis
Paper II **Management Accounting:**	CO1: Management Accounting CO2: Investment Accounts, Royalty Accounts CO3: Valuation of Goodwill, Valuation of Shares CO4: Internal Reconstruction and Amalgamation of Companies CO5: Liquidation of Companies

B.Com Part III

Course Outcomes of EAFM

On studying this course the student will be able to have a clear understanding of:

Paper I **Rural Development and Cooperation**	CO1: Rural Development Administration CO2: Panchayati Raj Act and Rajasthan Panchayati Raj Act CO3: Rural Development Programs CO4: Programs related to Tribal Welfare CO5: Concept of Cooperation
Paper II **Business Budgeting**	CO1: Business Budgets and Budgeting CO2: Business Forecasting CO3: Cash Budgeting CO4: Product and Production Decision CO5: Project Planning and Feasibility Study