G.H.S. GOVERNMENT COLLEGE SUJANGARH, CHURU (RAJASTHAN)-331507

DEPARTMENTOFCHEMISTRY
(UG &PG)

LearningOutcomesofB.Sc.Programme :--

❖ Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry.
❖ Solve the problem and also think methodically, independently and draw a logical conclusion.
❖ Create an awareness of the impact of chemistry on the environment, society, and development outside the scientific community.

ProgramSpecificOutcomesofB.Sc. Programme :--

❖ Gain the knowledge of Chemistry through theory and practical experiments.

B.Sc.PART-ICHEMISTRY:-

CourseLearningOutcomes :-

❖ Understand atomic structure, modern periodic table and periodic properties of elements.
❖ Understand the concept of chemical bonding.
❖ Gain basic knowledge of stereochemistry of organic molecules.
❖ Learn chemistry of alkanes, alkenes, alkynes, alkadienes, cycloalkanes, alkyl halides.

B.Sc.PART-IICHEMISTRY:-

CourseLearningOutcomes :-

❖ Understandunderlyingconceptsofelectrochemistry,electrochemicalcells,buffersand corrosion.
❖ UnderstandchemistryTransitionElementsandtheirCoordinationCompounds.

❖ Understandstructureandaromaticityofbenzeneandmechanismofelectrophilic substitution reactions.
❖ Determineheatofneutralizations,enthalpyofsolution,transitiontemperature

B.Sc PART-III CHEMISTRY:-

CourseLearningOutcomes

❖ Understand elementary Quantum Mechanics.
❖ Learn about HSAB concepts of acids and bases.
❖ Understand crystal field theory for coordination compounds and their electronic spectra.
❖ Study of different classes of aromatic compounds such as aromatic amino,diazonium salts polynuclear hydrocarbons, heterocyclic compounds

LearningOutcomesofM.SC. Programme :-

After successful completion of Master Degree program in chemistry a student should be ableto :-

❖ Havingaclearperceptiveofthesubjectrelatedconceptsandcontemporaryissues.
❖ DemonstrateandapplythefundamentalknowledgeofthebasicprinciplesofChemistry in various fields.
❖ Applyadvancedconceptsof physicalorganic,inorganicand analyticalchemistryto solve complex problems to improve human life.
❖ Design experiments, analyze, synthesize and interpret data to provide solutions to different industrialproblemsbyworkinginthepure,interandmulti-disciplinaryareasof chemical sciences

ProgramSpecificOutcomesofM.Sc. Programme :--

Usemoderntechniques,variousequipmentsandChemicalsoftware.
❖ To understand the basic principles of Organic, Inorganic, Physical and Analytical Chemistry and its applications through Various laboratory experiments.
❖ students who studies Inorganic Chemistry gains knowledge pertaining to Alkyl ,Aryls compounds of transition metal-carbon metal bonds,metal in medicine,metallozyme,supramolecular chemistry.natural products,Heterocyclic compounds,alkaloids,steroids ,plant pigments etc.,
❖ students who studies physical chemistry understand the concepts in MO and VBT,principle of reactivity,kinetic isotope effect,solvation and solvent effects etc.

M.Sc. SEMESTER-I :-

CourseLearningOutcomes

AftersuccessfulcompletionofcourseaStudentshouldbeable to:

❖ Studyfreeionsintetrahedral,octahedralandsquareplanarcrystalfields,Orgel diagrams, Tanabe Sugano diagrams.
❖ KnowMetal-ligandBonding,LimitationsofCFT.
❖ UnderstandElectricaldoublelayer,electrokineticphenomena,Overvoltage.
❖ Analysisofternaryorganicmixture

M.Sc. SEMESTER-II :-

CourseLearningOutcomes

AftersuccessfulcompletionofcourseaStudentshouldbeable to:-

❖ UnderstandMechanismofadditiontoC=Obonds,Cram'srule,condensationreaction involving enolates e.g., Aldol, Cannizzaro, Stobe and Claisen condensations
❖ StudyunderlyingconceptofdifferenttypesPericyclicreactions.
❖ GetKnowledgeabouttitrationwithhelpofPHMeterandconductometer

M.Sc. SEMESTER-III :-

CourseLearningOutcomes

AftersuccessfulcompletionofcourseaStudentshouldbeable to :-

❖ UnderstandStructure,functionandconfigurationofdisaccharidespolysaccharides
❖ ToGetknowledgeofEnvironmentalChemistryincludingenvironmental pollutants, Green house effect global warming. Acid rains and Ozone layer depletion
❖ StudyElectronTransferinBiologyinvolvingmetaloproteinsandcytochromes

M.Sc. SEMESTER-IV :-

CourseLearningOutcomes

AftersuccessfulcompletionofcourseaStudentshouldbeable to :-
❖ UnderstanddifferentpathwaysofBiogenesisofNaturalProducts
❖ StudySpectroscopicmethodsofanalysis:UV-Visible,IRComputationalExperiments:
❖ EstimatemagnesiumandcalciumintapwaterthroughFlame-Photometry

G.H.S GOVT COLLEGE, SUJANGARH

DEPARTMENT OF HISTORY

Learning outcomes of B.A. Programme-

BA Programme Course imparts traditional knowledge of history along with maintaining relevance for the needs of career searching of the students. It equips the students with the skills required for rational thinking and critical analysis. The focus is on providing in-depth knowledge of the subject matter in a manner that enables the students to well handle the syllabus of various competitive exams. It also inculcates research orientation among the students that helps in higher education.

B.A.PART I HISTORY

Course Learning Outcomes-

This course has been designed so as to equip the students with the qualitative knowledge of the polity, economy, culture and society of Ancient India. The design of the course and the related examination pattern imparts objective and subjective knowledge base to the students that directly helps in both competitive exams and research field alike. The curriculum design focuses on imparting the knowledge of Ancient India and History of Rajasthan and world History.

B.A. PART II HISTORY

Course Learning Outcomes

- Both the papers are critical part of General Knowledge that enhances the prospects of students to successfully deal the challenges of competitive exams and research field. The curriculum design focuses on imparting the knowledge of Medival India and History of Rajasthan .

BA PART III HISTORY

Course Learning Outcomes

It provides in-depth knowledge of the subjects like Modern India that entails freedom struggle. Besides topics of Indian culture and civilization has been included. Command over both the segments is a must for the students to handle various job related exams and the challenges of higher studies

G.H.S. GOVERNMENT COLLEGE,SUJANGARH
CHURU(RAJASTHAN)-331507

DEPARMENT OF BOTANY

Learning Outcomes of B.SC. Programme:-

❖ Knowledge of the systematic classification of plants, evolution, ecology, developmental biology, physiology, biochemistry, as well as the morphology, anatomy, reproduction, genetics, and molecular biology of numerous living forms.

❖ Knowledgeable in the use of transgenic technologies for basic and applied plant science research, including the exploitation of plants as industrial resources or as a system to support human livelihoods.

❖ Understanding different plant life forms, their morphology, anatomy, and reproductive processes, as well as genetics, microbiology, molecular biology, recombinant DNA technology, transgenic technology.

Program Special Outcome of B.Sc. Programme:-

❖ Students will be able to demonstrate the experimental techniques and methods in plant sciences and have innovative research ideas. .

B.SC.PART-I BOTANY

Course Learning Outcomes:-

❖ Students will be able to identify various life forms of plants, Students would have understanding of the classification, characteristic features, cell structure and growth and reproduction in viruses, bacteria, and economic importance.

❖ Upon completion of this course, the students will be able to: 1. Understand the world of fungi, lichens and pathogens of plants 2. Understand characteristics the ecological andeconomic significance of the fungi and lichens 3. Understand the application of mycology in various fields of economic and ecologica 4. Significance 5. Understand the economic and pathological importance of fungi, bacteria and viruses 6. Identify common plant diseases and their control measures.

B.SC. PART-II BOTANY

Course Learning Outcomes:-

❖ The students will be made aware of the group of plants that have given rise to land habit and the flowering plants. Through field study they will be able to see these plants grow in nature and become familiar with the biodiversity.

❖ Knowledge of various cells and tissues, meristem, epidermal and vascular tissue system in plants. Various aspects of growth, development of the tissues and differentiation of various plant organs.Knowledge of basic structure and organization of plant parts in angiosperms.

❖ After studying Economic Botany, students would have first hand information of plants used as food, the various kinds of nutrients available in the plants.

❖ Student would have an understanding of Induction of flowering, molecular and genetic aspects of flower development. Anther structure, pollen development, dispersal and pollination Ovule, embryo sac development and fertilization, Endosperm development and its importance Alternative pathways of reproduction and their importance .Student would be able to apply this knowledge for conservation of plants, pollinators and fruit development.
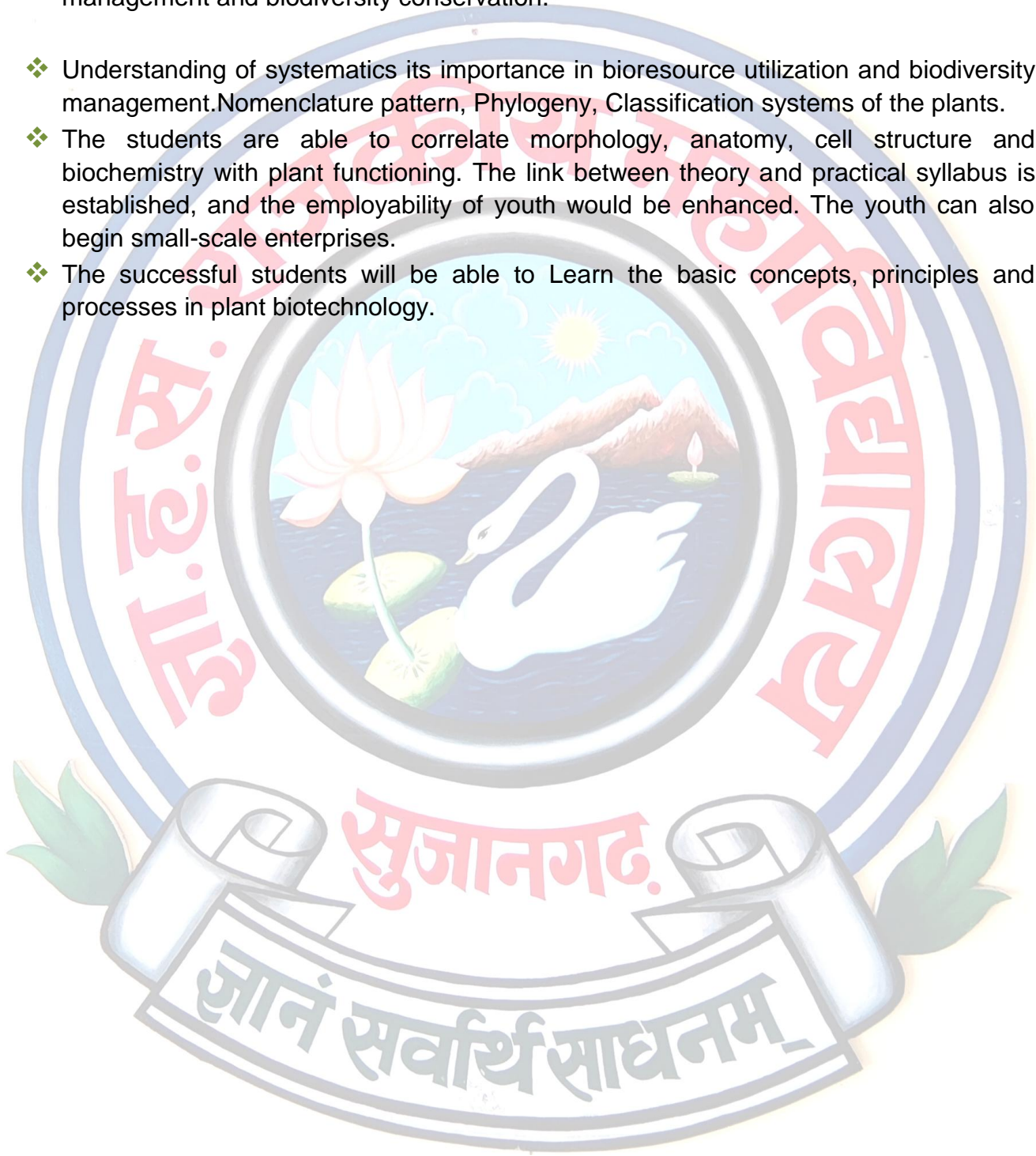
B.SC. PART-III BOTANY

Course Learning Outcomes :-

❖ To generate interest among the students in Genetics and make them aware about the importance and opportunities in higher education and research, the first unit should be Introductory dealing with how this area has revolutionized all aspects of our life from its growth from Mendel to Genetic Engineering. Modes of inheritance of traits/ phenotypes and Phenotype-genotype corelation are the basic learning.

❖ Understanding of nucleic acid, organization of DNA in prokaryotes and Eukaryotes, DNA replication mechanism, genetic code and transcription process. 2. Processing and modification of RNA and translation process, function and regulation of expression. 3. Application in biotechnology.

❖ It acquaint the students with complex interrelationship between organisms and

environment; make them understand methods to studying vegetation, community patterns and processes, ecosystem functions, and principles of phytogeography. This knowledge is critical in evolving strategies for sustainable natural resource management and biodiversity conservation.

❖ Understanding of systematics its importance in bioresource utilization and biodiversity management.Nomenclature pattern, Phylogeny, Classification systems of the plants.

❖ The students are able to correlate morphology, anatomy, cell structure and biochemistry with plant functioning. The link between theory and practical syllabus is established, and the employability of youth would be enhanced. The youth can also begin small-scale enterprises.

❖ The successful students will be able to Learn the basic concepts, principles and processes in plant biotechnology.

G.H.S GOVT. COLLEGE SUJANGARH

DEPARTMENT OF SOCIOLOGY

Learning Outcomes of B.A. Programme

The study of sociology will prepare an individual become useful member of society and Nation at large.

BA PART I SOCIOLOGY

Course Learning Outcomes-

This course enables the students to know about the origin and concept of sociological principles. Students   to come to know about the features of Indian society.
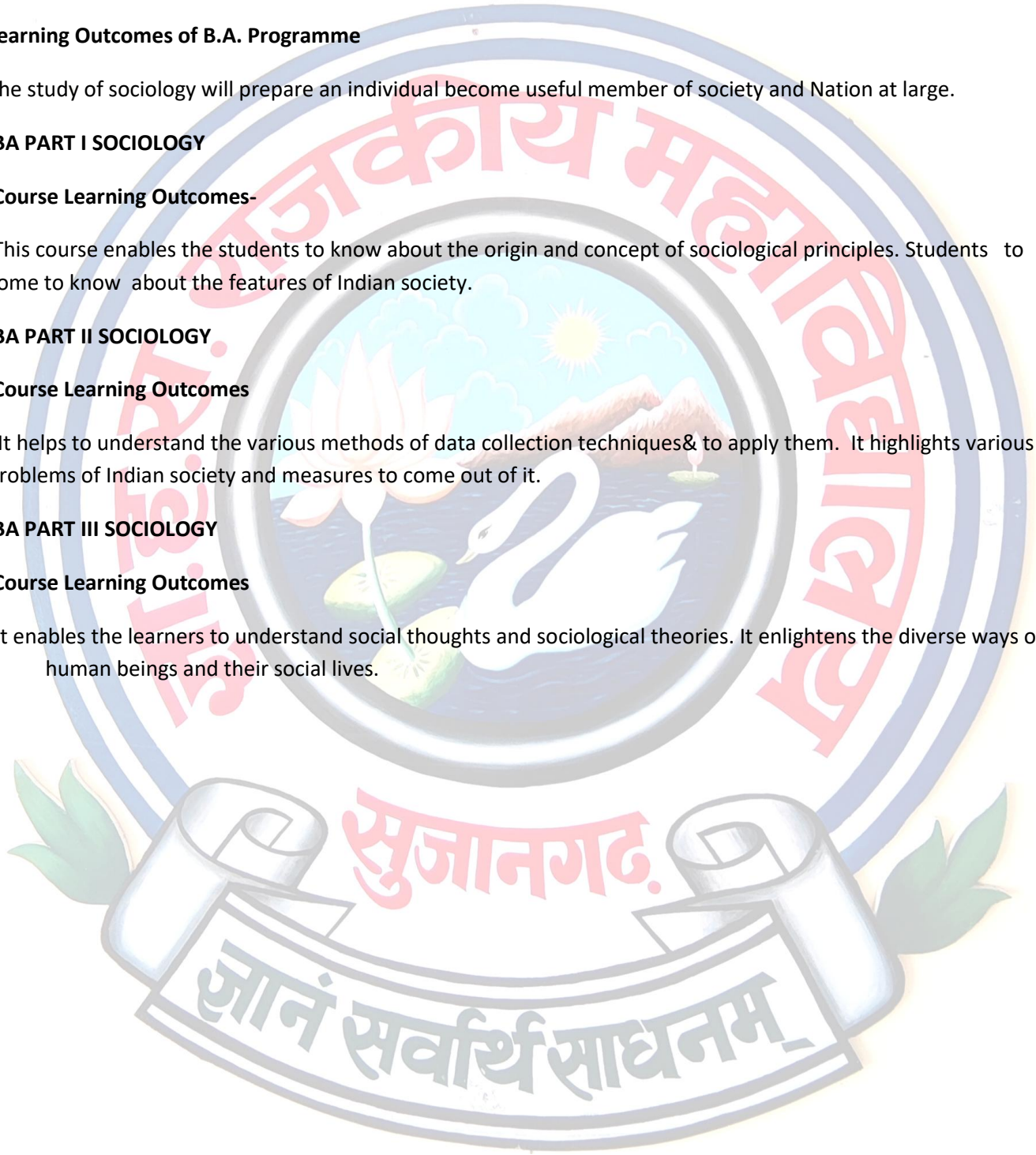
BA PART II SOCIOLOGY

Course Learning Outcomes

It helps to understand the various methods of data collection techniques& to apply them. It highlights various problems of Indian society and measures to come out of it.

BA PART III SOCIOLOGY

Course Learning Outcomes

It enables the learners to understand social thoughts and sociological theories. It enlightens the diverse ways of human beings and their social lives.

Economics

The BA programme in Economics is designed to provide students a rigorous undergraduate training in economic analysis. The aim is to expose students to multiple perspectives within the discipline-the social, historical and political dimensions of economics and to familiarize them with data handling and data analysis.

Learning Outcomes of B.A. Programme-

- The students acquire knowledge in the field of social sciences, literature and humanities Which make them sensitive and sensible enough?
- The program empowers the graduates to appear for various competitive examinations• or choose the post graduate program of their choice.
- Develop basic understanding of operations of an economy.
- Program improves skills related to basic problem solving & practical application of economic theory.
- Boost the spirit of self-confidence and inculcate the spirit of moral values

Programme Specific Outcomes (PSOs)B.A. Programme:-

- Develop a deep understanding of the understanding of the operations of money and banking and their interaction with the rest of the economy.
- Apply theories and interrelations of international trade and development with domestic macro policies.
- Apply mathematical and statistical models on econometrics to decipher the micro and macro-economic phenomena
- Articulate strategies related to sustainable development.

BA PART I ECONOMICS
Course Learning Outcomes-

- On successful completion of the course, a student will be able to develop a sound understanding of the core microeconomic concepts that use to understand the process of decision-making by an economic agent.
- They will be able to analyze the behavior of consumers & producers in the market, price determination in the various forms of markets, factor pricing and welfare concepts.
- After completion of the course, students will be able to understand the ancient India's economic thought and compare to current situations.
- Students will be familiar with great Indian personalities who originate Indian economic ideas.

BA PART II ECONOMICS

Course Learning Outcomes-

- Will able to get an overview of the major developments in macroeconomic theory with particular emphasis on the policy prescriptions of the earlier macroeconomics schools of thought. Such as Classical, Keynesian, Neo Classical, New Keynesian and Monetarists.
- Students will be able to develop an understanding of the interrelationships among the various macroeconomic variables and the way they impact upon the working of the economy as a whole.
- On successful completion of this course students will be able tohave a clear picture of the economic growth trajectory, economic policies, and institutional reformsin India.
- Understand four major economic challenges of Indian economy, i.e., poverty, inequality, unemployment and inflation.
- Have an in-depth analysis of the sectoral contributions of agriculture, industry and service sector in India and trade relations with world.
- On completion of this course, a student should be able toexpress relationship between economic variables mathematically, analyze, optimize and interpret them Use appropriate techniques to solve problems with calculus and linear algebra.
- To provide a basic exposure to the calculus of functions and their application to the discipline of economics& to help students gain an understanding of how to solve mathematical problems that are common to economic modeling.
- They will be able to use game theory, input-output and linear programming to solve economic problems.

BA PART III ECONOMICS
Course Learning Outcomes-
- Upon successful completion, students will have the knowledge and skills to understand several key models and concepts of monetary economics and concepts of banking.
- Will understand the role of money and banks in the broader economy.
- On successful completion of this course, the students will be able tohave conceptual clarity on the theories of public goods, public expenditure, public revenue, public borrowing and financial administration.
- After completion of this course the student is able to understand the basic knowledge on data collection, data presentation and various statistical elementary tools i.e., measures of central tendency and measures of dispersion.
- Find the inter-relation between two or more phenomena with the help of curve fitting and correlation-regression analysis.
- Will able to understand how to build models by expressing words in symbols, numbers and equations and new techniques to solve complex problems.
- Develop an understanding of the structure of Rajasthan economy.
- Comprehend the importance, contribution and growth of agricultural and industrial sectors of Rajasthan.
- Analyze the position of Rajasthan in Indian economy on the basis of various economic parameters.

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.

2. 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 through 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 andϖ communication.
- ➢ The students can work in different domains like Accounting, Taxation, HRM, Banking and Administration.

3. 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.
- PSO7 Self Directed and Lifelong Learning 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. Focus is on practical learning by inculcating knowledge related to new paradigms of Economics and Financial activities

G.H.S. GOVERNMENT COLLEGE SUJANGARH (CHURU) RAJ.

DEPARTMENT OF MATHEMATICS

Learning Outcomes of B.SC. Programme-

- The B.Sc. program has been designed with the objective of imparting the best of subject knowledge and to provide the latest subject matter, both theoretical as well as practical, in such a way to enhance their core competency and discovery learning.
- Insistence is on extensive knowledge to fight competitive exams and pursue higher studies.
- To acquire a wide range of problem solving skills, both analytical and technical and to apply them.
- To motivate the students to pursue PG courses in reputed institutions.

B.SC.PART-I MATHEMATICS

Course Learning Outcomes

- The graduates gets equipped with a fundamental/systematic or coherent understanding of the academic field of mathematics, its different learning areas like Algebra ,calculus, geometry and vector calculus.
- The students would learn about theory of equation, matrices, derivative of an arc, maxima-minima, double – triple integral and their application. Also they learn about geometry of different 3D shapes.
- They acquire procedural knowledge that creates different types of professionals related to different areas of study in mathematics outlined above and government and public service.

B.SC.PART-II MATHEMATICS

Course Learning Outcomes

- The students would gain the knowledge of Abstract Algebra, differential equation and mechanics.
- They would know idea of group, ring, subbing and field properties. Also methods of solving differential equation and different types of forces and motion.

B.SC.PART-III MATHEMATICS

Course Learning Outcomes

- Students would know about the Real and Complex Analysis, mathematical statistics and numerical analysis. The topics covered in the In this course are limit, continuity, differentiability, rolls theorems, complex integration and numerical methods.

DEPARTMENT OF MATHEMATICS

Learning Outcomes of M.sc. Programme

- The master's degree in mathematics puts a strong emphasis on keeping students up to date on all aspects of the subject and preparing them for careers in teaching and other fields.
- By the end of this programme the student has a very clear concept of Advanced abstract algebra, analysis, mathematical methods, differential and integral equations and numerical methods, topology and functional analysis, Continuum mechanics
- The outcome of this specific programme is that it enriches the student with the knowledge about Generalized hyper geometric functions, Advance Discrete Mathematics, Mechanics, Fluid dynamics, Operation research, Topology, Mathematical theory of Statistics ,Computer Applications and Relativity and Cosmology.
- To enable the graduates to prepare for the state, national as well as international competitive examinations, especially UGC-CSIR NET, Various Scientists post in DRDO, ISRO and state and central Civil Services Examinations

Course Learning Outcomes

- The course includes the subject knowledge of abstract and linear algebra, complex analysis, measure theory, differential geometry, tensors, metric space topology, special function and integral transforms. This course includes numerical analysis, integral equation, function analysis in, continuummechanics and operational research.

Programme Specific Outcome of M.Sc., Mathematics

- Create a hypothesis and appreciate how it relates to broader theories.

- Evaluate hypotheses, theories, methods and evidence within their proper contexts.

- Solve complex problems by critical understanding, analysis and synthesis.

- Demonstrate engagement with current research and developments in the subject.

- Critically interpret data, write reports and apply the basics of rules of evidence.

- Select, interpret and critically evaluate information from a range of sources that include books, scientific reports, journals, case studies and the internet.

- Develop proficiency in the analysis of complex physical problems and the use of mathematical or other appropriate techniques to solve them.

- Provide a systematic understanding of the concepts and theories of mathematics and their application in the real world – to an advanced level, and enhance career prospects in a huge array of fields.

- Criticize mathematical arguments developed by themselves and others

- Communicate effectively by oral, written, computing and graphical means.

- Recognize the need to engage in lifelong learning through continuing education and research

Course Outcome of M. Sc.

MathematicsCourse Outcome of Algebra

Students will able to

- Define Group and Subgroups, Normal Subgroups, Quotient Groups and Permutation Group with examples.
- Prove Cayley'stheorem, Sylow's theorem.
- Define Ring, Field, Extension Field, Euclidean Rings, Polynomial Rings andVector Space with examples.
- Find the roots and the derivatives of a Polynomial, irreducible polynomial,simple extension, automorphism of a Field.
- Discuss the symmetric function, normal extension, splitting field, Galois Group.

Course Outcome of Analysis

IStudents will able to

- Determine the basic topological properties of subsets of the real numbers
- Define connectedness and compactness, and prove a selection of related theorems.
- Define the limit of a sequence, series and the Cauchy criterion
- Test the convergence of series using Ratio, Root and comparison tests.
- Define continuity of a function and uniform continuity of a function
- Prove a theorem about continuous functions
- Determine the continuity of a function at a point and on a set.
- Differentiate the concept of continuity and uniform continuity
- Define the derivative of a function
- Prove a theorem about the derivatives of functions
- Prove the Bolzano-Weierstrass theorem, Rolle's theorem, extreme value theorem,and the Mean Value theorem
- Appreciate how abstract ideas and rigorous methods in mathematical analysiscan be applied to important practical problems.

Course Outcome of Differential Geometry

Students will able to

- Prove some necessary and sufficient conditions that a curve be a straight lineand a curve be a plane curve.
- Illustrate curvature and torsion of a curve.
- Define involutes and evolutes.

- Show fundamental theorem for space curves.
- Analyse some properties of family of curves.
- Find orthogonal trajectories of a family of curves.
- Explain Geodesics and Normal property of Geodesics.
- Prove Geodesic curvature theorems and Gauss – Bonnet theorem.
- Derive some properties of Developable surface.
- Prove Monge's theorem on developables associated with curves on surfaces.

Course Outcome of MechanicsStudents will able to
- Define D'Alembert's principle
- Derive Lagrange's equation for holomonic and non holomonic constraints
- Attain the applications of Lagranges formulation
- Explain the symmetry properties
- Classify orbits
- Solve the problems of Kepler, Laplace.
- Prove Virtual theorem, Bertrands theorem.
- Find the solution of two body central force.

Course Outcome of Probability and StatisticsStudents will able to

- Define Probility set function, Expectation of a random variable.
- Derive Chebyshev's inequality.
- Describe conditional Distributions and expectations.
- Solve the problems by using Chebyshev's inequality.
- Illustrate the Poisson, Gamma and Chi-Square Distributions.
- Solve the problems by using Bivariate Normal distribution.
- Explain distributions of order statistics.
- Prove the central limit theorem.

Course Outcome of Discrete MathematicsStudents will able to

- Define Semigroups, Monoids, Homomorphism and Isomorphism.
- Describe the TF statements, connectives, atomic and compound statements.
- Illustrate Tautology, Tautological implication, Truth Tables, Normal Forms,Principal Normal Forms.
- Discuss the theory of inference, quantifiers, predicate calculus.
- Interpret Lattices, Boolean Algebra, Karnaugh Map, Switching Circuits.

Course Outcome of Graph TheoryStudents will able to

- Illustrate different types of graph theory.
- Define Euler Tours and Hamiltonian cycles and prove related theorems.
- Explain Matchings and edge colouring.
- Define edge chromatic number and some properties are proved.
- Define independent sets and cliques and prove related theorems.
- Define vertex colouring and prove theorems on vertex colouring.
- Derive properties of planarity and Euler's formula.
- Prove Five colour theorem.

Course Outcome of Complex Analysis

Students will able to

- Recognize the concept of limits, continuity, Differentiability and analytic function
- Test the analyticity of a given function.
- Prove the Lucas's theorem, Abel's theorem and Cauchy's Theorems.
- Discuss conformality, linear transformation, singularities, types of singularitiesand Residues.
- Prove the local mapping theorem, maximum modulus principle, Residue theorem.
- Evaluate the integral using Cauchy's integral formula and Residue theorem.
- Find the Taylor's and Laurent's series expansion of given function
- Show Jensen's formula.

Course Outcome of TopologyStudents will able to

- Define topological spaces, product topology, metric topology, quotient space.
- Discuss the continuous functions, connected space, compact space, complete metric space, related theorems on Baire space.
- Describe closed sets and limit points, components and path components.
- Prove Urysohn's lemma, Urysohn's metrization theorem, Nagata-Snirnov metrization theorem, Ascoli's theorem.
- Understand the separation axiom, a space filling curve.

Course Outcome of Number TheoryStudents will able to

- Define divisibility, greatest common divisor, Prime numbers, congruence, Dirichlet convolution, Generalized convolution, Quadratic residues.
- Prove fundamental theorem of Arithmetic
- Compute greatest common divisor of two numbers, more than two numbers
- Discuss the function of Mobius, Euler , Lioville, Mangolt, the divisor.
- Apply Chinese Remainder theorem, Quadratic reciprocity law to solve problems.
- Explain Diophantine equation
- Derive Euler Summation formula, Elementary asymptotic formula, Dirichlet inversion formula, Mobius inversion formula, Guass lemma

Course Outcome of Numerical AnalysisStudents will able to

- Solve the equations using Newton's method, Fixed point iteration and Relaxation method.
- Uniform Approximation and Least Square approximation by Polynomials.
- Evaluation of differentiation and integration using Gaussian rules and compositerules, Taylor's series and Euler's method.
- Solve the difference equation.
- Estimation of errors.
- Find the solution of the given equation using Predictor – Corrector method.
- Solve the boundary value problem.

Course Outcome of Fuzzy MathematicsStudents will able to

- Find crisp sets and fuzzy sets and discuss the types of fuzzy sets.
- Classify the operations on fuzzy sets.
- Illustrate fuzzy relation.
- Explain fuzzy measures and classify possibility and necessity measures
- Determine decision making in fuzzy environments and solve the corresponding L.P.P by simplex method

Course Outcome of Automata TheoryStudents will able to

- Define Automata
- Discuss the acceptability of a string by finite automation
- Construct non-deterministic finite state machine

G.H.S. GOVT. COLLEGE, SUJANGARH
Department of Zoology
Zoology Program Outcomes, Program Specific Outcomes and Course Outcomes

ZoologyProgramOutcomes:

PO1 - Students gain knowledgeand skill in the fundamentals ofanimal sciences, understands the complex interactions among various living organisms.

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

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 behavior of animals.

PO5–Correlatesthephysiologicalprocessesof animalsandrelationshipoforgansystems.

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, bee keeping,aquaculture, animal husbandry, poultry farm.

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

PO9-Apply ethical principles and commit to professional ethics and responsibilities in delivering his duties.

PO10–Apply the knowledge and understanding of Zoology to one's own life and work.

PO11 – Develops empathy and love towards the animals

ProgramSpecificOutcomes:

PSO1. Understand the nature and basic concepts of cell biology, genetics, taxonomy, physiology, biochemistry, ecology, evolutionary biology, developmental biology and applied and economic zoology.

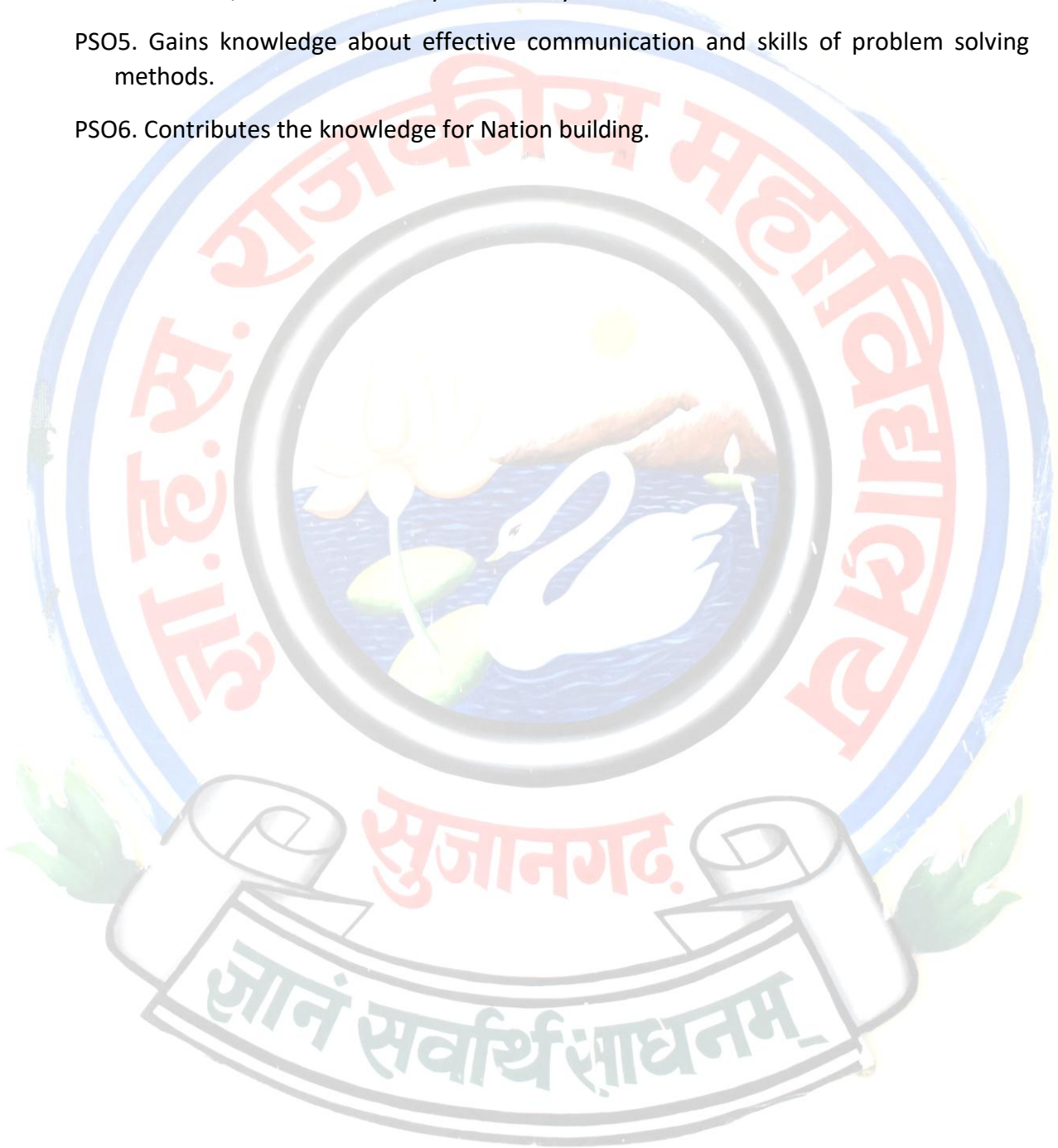PSO2. Analyze the relationships among animals, plants and microbes.

PSO3. Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology, Cell biology, Genetics, Applied Zoology, Clinical science, tools and techniques of Zoology, Toxicology, Entomology, Nematology, Sericulture, Biochemistry, Fish biology, Animal biotechnology.

PSO4. Understand the applications of biological sciences in Apiculture, Aquaculture, Sericulture, Animal Husbandry and Poultry Farm.

PSO5. Gains knowledge about effective communication and skills of problem solving methods.

PSO6. Contributes the knowledge for Nation building.

CourseOutcomes:

Animal Diversity–Invertebrates& Vertebrates

CO1.Describe general taxonomic rules on animal classification.

CO2.Classify Phylum Protozoa to Echinodermata with taxonomic keys.

CO3. Imparts conceptual knowledge of vertebrates, their adaptations and associations in relation to their environment.

CO4.ClassifyphylumProtochordatestoMammalia.

CO5. Complex Vertebrate interactions.

ComparativeAnatomyandDevelopmentalBiology ofVertebrates:

CO1.ComparativeknowledgeofIntegumentary, Digestive, Circulatory,Urinogenital, Nervous and Skeletal system of various classes of vertebrates.

CO2.Basic concepts of developmental biology.

CO3.Conceptof hormonal regulation of reproduction.

PhysiologyandBiochemistry:

CO1.Students gainfundamental knowledgeof animal physiology

CO2.Seeks to understand the mechanisms that work to keep the animal body alive and functioning.

CO3.Interactions and interdependence of physiological and biochemical processes.

CO4. Students are taught the detailed concepts of digestion, respiration, excretion, the functioningofnervesandmuscles,cardiovascularsystem,endocrinesystemandreproductive system.

CO5. Physiological and biochemical understanding through scientific enquiry into the nature of mechanical, physical, and biochemical functions of animals, their organs, and the cells of which they are composed.

CO6.Students learn the concepts of endocrine systems and homeostasis.

Geneticsand EvolutionaryBiology:

CO1.Division aspects of basic unit of life i.e. cell. CO2. Mendelian and non-mandilion

inheritance.

CO3.Understanding of basic concepts of genetics and laws of inheritance.

CO3.Concept behind genetic disorder, gene mutations-various causes associated within born errors of metabolism.

CO4.Theories of evolution and knowledge of evolution of

species. CO5. Knowledge about eras and population genetics.

CO6.Understanding of genetic basis of evolution, human karyotyping and speciation.

Cell Biology:

CO1.To familiarizes students with the structural and functional aspects of cell, the basic

unit of   life and its different organelles.

 CO2. Students will be able to understand the cyclic events of cell division and types of cell

division.

CO3. Students will understands cell signaling and process of cell death and aging.

Endocrinology:

CO1.Undersatnding the important branch of

physiology. CO2. Study endocrine glands

structure and functions.

CO3.A comparative approach is useful to understand, how different hormones regulate

particular physiological activity, irrespective of their diversity in order to maintain

homeostasis Understandingofbasicconceptsofgeneticsandlaws ofinheritance.

Ecology:

CO1.Understand mechanism by which organisms interact with other organisms and with their

physical environment.

CO2. Describe biotic and abiotic factors that influence the dynamics of population.

CO3. Understand principals of toxicology and the harmful effects of toxic metals on human

and environment.

CO4.Understanding the environment pollution and its protection.

ENGLISH LITERATURE

Learning Outcomes of B.A. Programme-

- The B.A program has been designed with the objective of imparting the best of subject knowledge along with basic computer knowledge and language competency.

Program Special Outcome of B.A. Programme-

- The insistence is on extensive knowledge to fight competitive exams and pursue higher studies and it provides knowledge about the prose and poetry forms including information about important litterateur of Elizabethan to Modern Age

118 BA PART I ENGLISH LITERATURE

Course Learning Outcomes-

- This course has been designed keeping in mind knowledge, skills and make students familiarize with parenthetical literature of Britain.
- It provides knowledge about the prose and poetry forms of Elizabethan and Neo-Classical Age.

218 BA PART II ENGLISH LITERATURE

Course Learning Outcomes-

- The curriculum design emphasizes human values and subject competence related to the literature of Pre-Romantic and Romantic Ages.

318 BA PART III ENGLISH LITERATURE

Course Learning Outcomes-

- Information, capabilities, ethical considerations and significant societal issues were all taken into account when creating each course.
- It provides significant knowledge about Literature of Victorian and Modern Age.