## Mama Baleshwar Dayal Government College Kushalgarh (Banswara)



## 2019-20

## **PROGRAM OUTCOMES**

## PROGRAM SPECIFIC OUTCOMES

## **COURSE OUTCOMES**



## मामा बालेश्वर दयाल राजकीय महाविद्यालय कुशलगढ़ (बांस.)

MAMA BALESHWAR DAYAL GOVERNMENT COLLEGE **KUSHALGARH DISTT. BANSWARA (RAJ.) 327801** 

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Recognized by UGC u/s 2F & 12 B



प्राचार्यार्थ

#### Program Outcomes(POs), Program Specific Outcomes(PSOs) & Course Outcomes(COs)

- 1. B.A.
- 2. B.Sc.(Bio)
- 3. B.Sc.(Maths)
- 4. M.A.(Hindi)
- M.A.(Geography)

## Program Outcomes of B.A.

- 1. Critical Thinking: Ability to analyse, synthesize and integrate knowledge. Capability to evaluate the validity of arguments and conclusion.
- 2. Effective Communication: Proficiency in speaking, reading, writing and listening in English and one Indian language and find meaning of the world by connecting people, ideas, books, media and technology.
- 3. Social Interaction: Link with society and intercede the disagreement and help to reach conclusion in group sitting. Demonstrate intellectual awareness and competencies. Reflect on one's cultural identities and values.
- 4. Effective Citizenship: Promote active citizenship and community engagement. Ability to understand the national development, informed awareness of issues and participate in civic life.
- 5. Ethics: Understand and recognised value system, moral dimensions and self responsibility for nation and society. Demonstrate personal and intellectual integrity and academic accountability. Collaborate respectfully with others, individually and in teams.
- 6. Environment and Sustainability: Understand the issues and perspectives of environment context and sustainable development.

- **7. Self directed and lifelong learning:** Acquire the ability to engage in independent and lifelong learning in broad context of socio-technological changes.
- **8. Individual and team work:** Function effectively as an individual and as a member or leader of diverse teams and in multi-disciplinary settings.
- **9. Evaluate and conduct research:** Engage in scholarly inquiry to identify and investigate questions of a theoretical and applied nature which identify gaps and limitations in the existing literature, understand the principles of the research process, apply appropriate research methodologies to specific problems and develop intellectual independence and practices self- directed inquiry.
- **10. Depth of understanding:** Demonstrate detailed knowledge and perspectives across disciplinary boundaries. Develop a detailed understanding of the current state of knowledge in one or more disciplines. Recognise the value, use and limits of multi-disciplinary learning. Cultivate an openness to consider and engage alternative research perspectives.

# Program Outcomes of B.Sc.(Bio)

- (1) Knowledge: Students get acquainted with the knowledge of science which helps them to understand various events taking place in their surroundings. Students get Comprehensive knowledge and understanding of major concept, theoretical principal and experimental finding in science and its sub field; including broader interdisciplinary streams such as chemistry, zoology, botany.
- (2) Environmental protection: The environmental pollution is the main concern of the society these days. The students can aware the society about harmful pollutants, their affect on environment in general and effect on human health in particular
- (3) **Employability:** The students can find employment in following fields:
- (i) They can opt carrier in ethno botanical study, environment conservation, preservation.
- (ii) The students can go in industries viz. Pharmaceutical, fertilizer, bio-fertilizer, organic fertilizer, textile, food ceramic, cement, petroleum, pesticides etc.
- (iii) The students can opt carrier in defense services (CDS) forest services (IFS), Zoological survey, botanical survey, atmosphere sciences etc.
- (iv) The students can go for ballistics, forensic, bio warfare labs, CBIR labs, DRDO, biotechnology, industrial chemistry etc.
- **(4) Dealing with untoward incidence**: The basic knowledge of science helps them to deal with the untoward incidence in the neighborhood, For example sudden explosion by chemicals, misuse unwanted substances excessive rain or drought can be managed by basic knowledge of science.

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(5) Ethics: While it is necessary to instil the spirit of competitiveness among students in a world of increasing competition, it is equally vital to develop a strong sense of ethics among learners that will help them develop some positive attitudes and values. This includes appreciation of the various principles and theories that evolved in science, the impact that science has on social, economical and environmental issues. One of the main objectives of any academic exercise, therefore, should be to produce well-groomed individuals who understand the significance of ethical values and abide by them even in the most pressing circumstances. In this program, this process is enabled through courses and facilitators who integrate the teaching of ethics in everyday pedagogy. As such, at the end of this program students will be able to develop, internalise and exercise ethics in their professional as well as personal practices.

# Program Outcomes of B.Sc.(Math)

- 1. Knowledge: Learners are encouraged to apply the knowledge of mathematics and science fundamentals to various solutions of complex problems. As such, knowledge of the subject is the sole objective of any student learner. A student is exposed to a wide range of topics in various subjects and is given intensive training in each of the courses that have laboratory related work. The learner is encouraged to use various mathematical methods (analytical and numerical) and experimental methods as an application to the acquired concepts and principles that help in studying various branches of sciences. At the end of the program, students are able to gain thorough knowledge in key areas in the subjects offered.
- **2. Problem analyses:** Well equipped with an understanding of the analytical methods involved, they are in a position to interpret and analyze results so obtained from experiments and draw suitable conclusions against their supported data acquired. At the end of the program, students will be able to identify, formulate and analyze scientific problems and reach concrete solutions using various principles of mathematics and sciences.
- **3. Employability:** With our learners long-term professional pursuits being quite varied, many are drawn to careers that require scientific skills or technical expertise or strong quantitative reasoning abilities. Keeping this in mind, the institution apprises students of various employment opportunities that are available in areas of their choice through the Placement cell. To equip these learners with knowledge other than that of the subject such as skills required helping them qualify for jobs, all the science subjects offer skill enhancement courses and value added courses so that learners have a better edge over their counterparts. At the end of the program students will be able to increase their employability through subject knowledge and additional skills.
- **4. Cognitive (thinking) skills:** On completion of this program the successful student will be able to:
  - Formulate problems in appropriate theoretical frameworks to facilitate their solution.
  - Develop strategies to solve mathematical problems in a range of relevant areas.



- Construct logical arguments solving abstract or applied mathematical problems.
- Criticise mathematical arguments developed by themselves and others.
- **5. Graduate skill:** On completion of this program the successful student will be able to:
  - work effectively and constructively as part of a team.
  - motivate and communicate complex ideas accurately using a range of formats.
  - identify and benefit from opportunities for personal and career development.
  - work confidently and accurately with formulae and numerical information.

# Program Outcomes of M.A.(Hindi)

- **PO1.** Apply the knowledge of language fundamentals and various literatures in society, computers, psychology, cognitive science and medicine.
- **PO2**. Formulate, solve and analyze complex problems in variety of domains that constitute the core of language and literature knowledge, including familiarity with diverse questions of interest in the areas of (and interfaces between) structures of language and aesthetics of literature.
- **PO3.** Apply the acquired knowledge for analyzing language and writing in appropriate genres and modes for a variety of purposes and audiences and provide solutions to societal and environmental contexts for problems related to language change, policy and planning.
- **PO4.** Design and conduct research, analyse and interpret data to provide valid conclusions in the field of literature and in the descriptive as well as applied language studies.
- **PO5.** Select and apply appropriate modern theories and techniques including cognitive, psychological, biological, cultural, and social factors for language study and research.
- **PO6**. Gain exposure to attain knowledge and understand interdisciplinary and multidisciplinary linguistic and literary approaches.
- **PO7.** Acquire professional and intellectual integrity, code of conduct and ethics on communicational practices, understanding responsibilities and norms for sustainable development of society.
- **PO8.** Interact with the specific linguistic community and with society at large, through critical conversations and prepare, organize, and deliver their work to the public through speaking and writing.
- **PO9.** Understand the aesthetic and scientific concepts of language and demonstrate the knowledge as a skilled person in teams and multidisciplinary tasks in their profession.

प्रा**मार्था**र्य कामा बालेञ्चर दयाल **PO10.** Appreciate the need for self-preparation and life-long learning independently in the broadest context of language challenges in the context of multilingualism and globalization.

# Program Outcomes of M.A.(Geography)

**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.

**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.

**Effective citizenship:** Students 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.

**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.

**Environment and sustainability:** The program helps in identifying and critically analyzing the spatial Distribution patterns of man-environment interactions, resource planning and management.

**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.



## **PSOs and Course Outcomes**

**Department of Mathematics** 

**B.Sc.** (Mathematics)

# Program specific outcomes (PSOs)

problems.

- **PSO2.** Understand the basic concept of Differential Equations of various types and apply in various real life problems.
- **PSO3**. Understand the Geometrical Interpretations of 2D and 3D shapes and evaluate their area and volume.
- **PSO4**. Analyse real numbers and their applications by certain results and apply then in various pure problems.
- **PSO5**. Analyse numerical problems and apply in various problems by different methods.
- **PSO6**. Understand the basic definition of Graph Theory, Tree and Boolean Algebra and analyse their application.

# Course outcomes (COs)

### PROGRAM: B.Sc. First Year MATHEMATICS

| Paper    | Paper<br>Name | Outcome of Course   |
|----------|---------------|---|
| Paper- I | Algebra       | CO1. Understand the concept of group theory and group homomorphism and isomorphism and important theorems related to them.  CO2.To find the solution of cubic equations by Cardon's, Horner's, Ferrari's methods. |
|          |               | CO3.To find the rank, nullity, eigen values, inverse of matrices.   |
| Paper-II | Calculus      | CO.1 Understand concepts of arc length and Geometrical interpretation of results obtained from it.  |
|          |               | CO.2 Understand the concepts of Asymptotes, points of inflexion and apply them in curve tracing.  |
|          |               | CO.3 Apply Beta and Gamma function in quadrature and rectification.   |
|          |               | CO.4 Understand the concept of differential equation and their types and analyse their applications.  |

| Paper-<br>III | Geometry | CO.1 Indentify the nature of conic of second and third degree.              |
|---------------|----------|---|
|               |          | CO.2 Geometrical properties of ellipse and hyperbola as well as 3-D shapes. |
|               |          | CO.3 Interpret the relation between plane and straight line.                |
|               |          | CO.4 Evaluation of principal plane and direction of conics.                 |
|               |          |   |

### **PROGRAM: B.Sc. Second Year MATHEMATICS**

| Paper         | Paper Name                | Outcome of Course  |  |
|---------------|---------------------------|--|--|
| Paper-        | Advanced<br>Calculus      | CO.1 Understand basic concepts of continuity and important theorems.   |  |
|               |                           | CO.2 Concepts of partial differentiation and its applications.   |  |
|               |                           | CO.3 Evaluate double and triple integrals and their applications.  |  |
|               |                           | CO.4 Understand vectors & scalars quantity, evaluate of gradient, divergence and curl.                             |  |
|               |                           | CO.5 Understand Gauss's theorem, Stoke's theorem and Green's theorem and   |  |
|               |                           | their applications.  |  |
| Paper-<br>II  | Differential<br>Equations | CO.1 Understand the concept of exact, simultaneous and total differential equation and analyse their applications. |  |
|               |                           | CO.2 To find the solution of linear differential equation with variable coefficients by various approach.          |  |
|               |                           | CO.3 Classify the partial differential equation and evaluate their solution using different approaches.            | AG.  |
|               |                           | CO.4 Analyse numerical solution of differential equation.  प्राप्त किया  | प्राज्ञासीय<br>॥ बालेश्वर दयाल<br>महाविद्यालय कुशलगढ़<br>१ बासवाड़ा ( राज. ) |
| Paper-<br>III | Mechanics                 | CO.1 Finding resultant of coplanar forces and study equilibrium of bodies under three or more forces.              |  |

| CO.2 Interpretation of virtual work by forces.  CO.3 Study the projective motion of various particles.  CO.4 Finding velocity and acceleration in various direction and study rectilinear motion.  CO.5 Study the motion of particle in resisting medium. |
|---|
|---|

#### **PROGRAM: B.Sc. Third Year MATHEMATICS**

| Paper          | Paper Name                | Outcome of Course   |  |
|----------------|---------------------------|---|--|
| Paper-<br>I    | Real Analysis             | CO.1 Understand the concepts of real number and analyse their properties.   |  |
|                |                           | CO.2 Study sequence, series and their applications.   |  |
|                |                           | CO.3 Apply Riemann integrals in evaluation of some integrals.   |  |
|                |                           | CO.4 Understand the concept of uniform convergence and study their applications.  |  |
| Paper-         | Abstract<br>Algebra       | CO.1 Understand the concept of ring theory and their applications.  |  |
|                |                           | CO.2 Study the concept of homomorphism and isomorphism of rings and their applications.   |  |
|                |                           | CO.3 Evolution of examples of vector spaces and related problems.   |  |
|                |                           | CO.4 Apply Sylvester law of nullity in linear transformations.  |  |
| Paper-<br>IIIA | Discrete<br>Mathematics   | CO.1 Understand the basic concept of sets and propositions, permutations and combinations.  |  |
|                |                           | CO.2 Understand the basic of relations and functions, Pigeon Hole principle, graphs and related theorems, trees and finite state machines.  |  |
|                |                           | CO.3 Understand the basic concept of Recurrence relations solution by the method of generation functions, boolean algebra Lattices, Duality.  Digital network switching circuits. | प्राचार्याची<br>प्राचार्याची<br>प्रमावारिकर दयाल<br>थ महाविद्यालय कुशलगढ़<br>ला बांसवाड़ा ( राज. ) |
| Paper-<br>IIIB | Numerical<br>Analysis and | CO.1 Study the interpolation methods of equi-distance and unequi  |  |

|                | Operation<br>Research      | distance intervals.  CO.2 Discuses the numerical integration methods and their derivations.  CO.3 Understand the concept of linear programming problems and methods of solving it. |
|----------------|----------------------------|--|
| Danar          | Mathamatical               | CO.4 Apply assignment and transportation problem in various physical problems.   |
| Paper-<br>IIIC | Mathematical<br>Statistics | CO.1 Understand the basic concept of probability, independent events and related problems.   |
|                |                            | CO.2 Understand the basic of Random variables, distribution functions, density functions, theoretical probability distribution and related theorems.                               |
|                |                            | CO.4 Understand the basic definition of Mathematical expectation, moments, curve fitting by least square principle, regression.  |

## **Department of Botany**

**B.Sc.** (Botany)

# Program Specific Outcomes (PSOs)

Programme Specific Outcomes (PSO):

The UG curriculum caters an all-round development of the student, rolling out globally ready individuals into the fast pacing world. The programme specific outcome includes:

- Understanding the nature and basic concepts of all the plant groups, their metabolism, components at the molecular level, biochemistry, taxonomy and ecology.
- The course will make them aware of natural resources and environment and the importance of conserving it.
- Hands on training in various fields will develop practical skills, handling equipments and laboratory use along with collection and interpretation of biological materials and data.



• Knowledge gained through theoretical and lab based experiments will generate technical personnel in various priority areas such as genetics, cell and molecular biology, plant systematics and biotechnology.

# Course Outcomes (COs)

#### PROGRAM: B.Sc. First Year BOTANY

| Paper    | Paper Name  | Outcome of Course   |
|----------|---|---|
| Paper- I | Microbes, Algae, Fungi,<br>Lichen, Mycorrhiza and<br>Bryophytes | Understand the diversity among Bacteria, Viruses and Fungi.   |
|          | Dryophytes  | Know the systematic, morphology and structure, of Bacteria, Viruses and Fungi.  |
|          |   | • Understand the life cycle pattern of Bacteria, Viruses and Fungi.   |
|          |   | Understand the useful and harmful activities of<br>Bacteria, Viruses and Fungi  |
|          |   | <ul> <li>Know the control measures of plant diseases.</li> <li>Understand the diversity among Algae, Bryophytes and Pteridophytes.</li> </ul> |
|          |   | To know about morphological, anatomical and developmental patterns in the algae and bryophytes.   |
|          |   | • Know the systematic, morphology and structure, of Algae and Bryophytes.   |
|          |   | • Understand the life cycle pattern of Algae and Bryophytes.  |
|          |   | Know the economic importance of Algae and Bryophytes.   |
| Paper-II | Pteridophytes and Gymnosperms                                   | Understand the diversity of Gymnosperms.  |
|          | , 1   | <ul> <li>Know the systematic, morphology and structure<br/>of Pteridophytes and Gymnosperms.</li> </ul>                                       |
|          |   | • To know about the reproductive parts their development and the mechanism of reproduction.   |

|               |                            | <ul> <li>Understand the life cycle pattern of pteridophytes and Gymnosperms.</li> <li>Know the economic importance of Pteridophytes and Gymnosperms.</li> </ul>   |
|---------------|----------------------------|---|
| Paper-<br>III | Plant Ecology and Taxonomy | <ul> <li>On completion of the course, students will be able to: Understand plant communities and ecological adaptations in plants</li> <li>Learn about biodiversity and its conservation Study botanical regions of India and different vegetation types.</li> <li>Understand bioremediation, global warming and climate change.</li> </ul> |

#### PROGRAM: B.Sc. Second Year BOTANY

| Paper        | Paper Name  | Outcome of Course   |
|--------------|---|---|
| Paper-       | Taxonomy and<br>Embryology of                                   | Understand the habit of the angiosperm plant body.  |
|              | Angiosperm  | Know the Pre-Darwinian and Post- Darwinian systems of Classification.   |
|              |   | Students will understand the dynamic mechanism of plant pollination, fertilization and development.   |
|              |   | They will have hands-on training on section cutting, preparation of slides study of pollen and ovules.  |
|              |   | Understand various angiosperm families emphasizing<br>their morphology, distinctive features, and biology.  |
| Paper-<br>II | Anatomy of<br>Angiosperm, Economic<br>botany and<br>Ethnobotany | Students will learn the internal structure of plants. It will enhance the basic understanding of organization of plant body by cells and tissues.       |
|              |   | Students will understand the dynamic mechanism of plant pollination, fertilization and development.   |
|              | •   | They will have hands-on training on section cutting, preparation of slides study of pollen and ovules.  |
|              |   | Students will be able to recognize the different types of tissue system.  |
|              |   | Students will be acquainted with the internal structure of  प्राप्ताकीय प्रतिविद्यालय करण  प्राप्ताकीय प्रतिविद्यालय करण  प्राप्ताकीय प्रतिविद्यालय करण |

|               |  | plant root, stem and leaf.  |
|---------------|--|---|
|               |  | Students will learn the technique of section cutting and slide preparation.   |
|               |  | Brief studied the economic products with special reference to the Botanical name, family, morphology of useful part and the uses.   |
|               |  | Be able to discuss patterns of cultural evolution with plants, Nutrition from plants and evolution of food processing, Patterns of human plant selection for food, medicine, poison, ritual and religion.   |
|               |  | Understand important interactions between cultural practices, ecosystems, and modern science.   |
|               |  | <ul> <li>Know and/or identify important plant species.</li> <li>Know specific plant taxa used by people.</li> <li>Know characteristics of plant taxa used by people: Physiology, biochemistry, pharmacology and toxicity of useful plants</li> <li>Know commonly used qualitative research methodsand demonstrate their use</li> <li>Have a knowledge of the sectors in which these plants are used and utilize the same to earn a livelihood.</li> </ul> |
| Paper-<br>III | Cytogenetics, Plant<br>Breeding, Evolution<br>and Biostatics | Students will gain knowledge of prokaryotic gene transfer Mechanisms, mutations and recombination.  • Explain principles/concept of Prokaryotic and Eukaryotic  |
|               |  | genetics, Viral genetics and application in research.   |
|               |  | Mutagenesis, Mutation and mutants and their significance in microbial evolution.  |
|               |  | Application of bacterial and eukaryotic plasmids in research.   |
|               |  | <ul> <li>Learn about Mendelian principles Know about gene mapping methods \&amp; Extra chromosomal inheritance Familiarize about Evolution \&amp; Emergence of evolutionary thoughts Gain knowledge on Plant breeding techniques \</li> <li>Studied various statistical methods of analysis</li> </ul>  |

PROGRAM: B.Sc. Third Year BOTANY



| Paper-I       | Environmental<br>Biology and<br>Phytogeography | A student completing a major in Environmental Biology shall demonstrate the ability to: Apply the scientific method and quantitative techniques to describe, monitor and understand environmental systems.  |
|---------------|--|---|
|               |  | By the end of this course, students should be able to:  |
|               |  | Apply principles of biogeography to predict and explain general characteristics of a plant community at any random point on the globe.  |
|               |  | Design studies and critically evaluate data to explain<br>biogeographic patterns (including use of statistical programming<br>language R).  |
|               |  | Interpret, summarize and apply knowledge found in primary scientific literature to biogeographic questions.   |
|               |  | Effectively communicate biogeographic principles in writing and the spoken word.  |
| Paper-<br>II  | Plant Physiology and Biochemistry              | Students will be able to understand the various physiological life processes in plants.   |
|               |  | They will also gain about the various uptake and transport mechanism in plants and are able to coordinate the various processes. They understand the role of various hormones, signaling compounds, thermodynamics, and enzyme kinetics.  |
|               |  | After completion of the course the students are familiar with various physiological aspects involved in the plant development.  |
|               |  | Also the role of enzymes in it and mechanism of photosynthesis, respiration, nitrogen and lipid metabolism.   |
|               |  | • The students are able to isolate starch, pectin and various nutritive products from the plants.   |
| Paper-<br>III | Molecular<br>Biology and                       | Students will study the detailed structure of nucleic acids.  |
|               | Biotechnology                                  | Students will learn in detail the molecular processes such as replication, transcription and translation.   |
|               |  | Understanding of gene structure, expression and regulation of gene expression in both prokaryotes and eukaryotes for application in molecular research.   |
|               |  | Discuss the different applications of biotechnology  प्राप्ताची विशेषक देवाल  |
|               |  | Understand the importance of cells to genetic engineering.    Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells to genetic engineering.   Timestand the importance of cells t |
|               | 1  | 1   |

• Know the natural function of restriction endonucleases and how a

|  | <ul> <li>normal bacterial cell protects its DNA from their activity.</li> <li>Understand how insulin is produced using bacterial cells and importance to gene technology.</li> <li>Describe techniques used to characterize DNA and Axenic culture of cell</li> </ul> |
|--|---|
| Laboratory and<br>Field based<br>experiments | On completion of the course, students will be able to: Understand the morphological diversity of different plant forms.  • Observe vegetative and reproductive parts of various plant   |
|  | forms.  |
|  | Detect chemical contents in various plant products of economic use.   |
|  | Acquire knowledge on chromosomes, Isolation of nucleic acids etc.   |
|  | Know botanical source, characteristics and utilities of plant products.   |
|  | <ul> <li>Learn about the industrial applications of various plants and<br/>plant products.</li> </ul>   |
|  | Understand the floristic composition of different phyto-<br>geographical regions.   |

### **Department of Zoology**

B. Sc. (Zoology)

# Program specific outcomes (PSOs)

**PSO**1. Students gain knowledge and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms

**PSO**2. Analyze complex interactions among the various animals of different phyla, their distribution and their relationship with the environment

**PSO**3. Apply the knowledge of internal structure of cell, its functions in control of

प्राज्ञार्खार्य प्राज्ञार्खार्य मामा बालेश्वर दयाल बनीय महाविद्यालय कुशलगढ़ जिला बांसवाड़ा (राज.) various metabolic functions of organisms.

- **PSO**4. Understands the complex evolutionary processes and behavior of animals
- **PSO**5. Correlates the physiological processes of animals, diseases and relationship of organ systems
- **PSO**6. Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species
- **PSO**7. Gain knowledge of Agro based Small Scale industries like sericulture, honey production, pearl culture and vermicomposting preparation.
- **PSO**8. Understands about various concepts of genetics and its importance in human health
- **PSO**9. Apply ethical principles and commit to professional ethics and responsibilities in delivering his duties
- **PSO**10. Apply the knowledge and understanding of Zoology to one's own life and work
- **PSO**11. Develops empathy and love towards the animals and prevention of cruelty to animals

# Course outcomes (COs)

### PROGRAM: B.Sc. First Year Zoology

| Paper | Paper Name            | Outcome of Course   |
|-------|-----------------------|---|
| P1    | Life and diversity of | CO1-The student gains knowledge about animal kingdom, Basis       |
|       | animals-I:            | of classification and their leading examples                      |
|       |                       | CO2 -Classify invertebrates up to phylum Echinodermata with       |
|       |                       | examples.   |
| P2    | Cell Biology          | CO1- Structural and functional aspects of basic unit of life i.e. |
|       |                       | cell concepts   |
|       |                       | CO2- Mendelian and non Mendelian inheritance                      |
|       |                       | CO3- Concept behind genetic disorder, gene mutations- various     |
|       |                       | causes associated with inborn errors of metabolism                |
| P3    | Developmental         | CO1-Basic concepts of developmental biology                       |
|       | Biology:              | CO2- Knowledge about organogenesis                                |
|       |                       | CO3- Application of DNA technology and molecular biology          |
|       |                       | for research  |
|       |                       | CO4- Gains knowledge about gametogenesis, cleavage                |
|       |                       | mechanisms, gastrulation and role of hormones in                  |
|       |                       | metamorphosis and regeneration                                    |

## PROGRAM: B.Sc. Second Year Zoology

| Paper | Paper Name                               | Outcome of Course  |
|-------|--|--|
| P1    | Structure & Function of vertebrate types | CO1-The student gains knowledge about animal kingdom, with special reference to vertebrates with examples. CO2 -Classify vertebrates with suitable examples. CO3- Students get to know of vertebrate animals with special reference to their morphology and organ / organ systems CO4- Representative Animals from the surrounding environment are studied CO5- Categorize the diversity found in the vertebrate groups of animals like reptiles, birds and mammals. CO6-Structure of organs, composition and affinities along with affinities   |
| P2    | Genetics and Biotechnology:              | CO1- Understanding of disease control, vaccination, process of immune interactions CO2- Use in recombinant DNA technology, genetic manipulations CO3- Understanding of in vitro culturing of organisms and production of transgenic animals, cloning, hybridoma and production of monoclonal antibodies CO4- Gains skills in medical, environmental biotechnology, bio pesticides, Biotechnology of aquaculture and use of animals as bioreactors CO5- Structural and functional organization of bacteria, mechanisms of life cycles, diseases and control; CO6- Mendelian and Non-Mendelian inheritance CO7- Concept behind genetic disorder, gene mutations-various causes associated with inborn errors of metabolism |
| P3    | Applied Zoology,<br>Microbiology         | CO1: Explain the basic concepts of apiculture like systematics, colony organization, polymorphism, morphology and the bee keeping, as occupation.  CO2- Knowledge about the poultry keeping, sericulture, lac culture, pearl culture and its processes, insect management CO3-Distribution of fauna in different realms interaction CO4- Understand Animal behavior and response of animals to different instincts   |

## PROGRAM: B.Sc. Third Year Zoology

AGA-

प्राप्तार्खार्य

|       | PROGRAM: B.Sc. I nird Year Zoology |   | प्राप्ताबाय<br>मामा बालेश्वर दयाल<br>राजकीय महाविद्यालय कुशलगढ़<br>जिला बांसवाड़ा (राज.) |
|-------|------------------------------------|---|--|
| Paper | Paper Name                         | Outcome of Course                                     |  |
| P1    | Physiology,                        | CO1- Types of immunity, antigens-antibodies and their |  |
|       | Biochemistry and                   | properties  |  |
|       | Immunology                         | CO2- Imparts in depth knowledge of tissues, cells and |  |

|    |                           | molecules involved in host defense mechanisms CO3- Understanding of disease control, vaccination, process of immune interactions CO4- 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 CO5- Gains knowledge of functional anatomy of vertebrates from fishes to mammals CO6- Students learn the concepts of endocrine systems and homeostasis CO7- Structure of all the biomolecules like the carbohydrates, proteins, lipids, nucleic acids, their classification structure and metabolism.  |
|----|---------------------------|---|
| P2 | Ecology and Biostatistics | CO1-Students will be able to explicate the ecological interconnectedness of life on earth by tracing energy and nutrient flows through the environment.  CO2- They will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.  CO3-Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species  CO4- Types of ecosystem – freshwater, marine and terrestrial, CO5- Population characteristics and dynamics – conceptual approach  CO6- Growth curves and pyramids; sigmoid curve, J curve and hyperbola; logistic equation and concepts relating to growth CO7- How the animals on the earth are distributed as per the environmental conditions  CO8- gains knowledge about Evolution of the animals, man, horse etc. and its processes such as variation, speciation, natural selection,  CO9- Biostatistics teaches them to use the best data analysis methods in their research projects  CO10- Students gains knowledge about statistical methods like measures of central tendencies, Probability  CO11- Learns about hypothesis testing and inferential statistic and learns the problem-solving methods. |
| P3 | Ethology & Evolution      | CO1- How the animals on the earth are distributed as per the environmental conditions.  CO2- gains knowledge about Evolution of the animals, man, horse etc. and its processes such as variation, speciation, and natural selection.  CO3-Distribution of fauna in different realms interaction.  CO4- Understand Animal behavior and response of animals to different instincts.   |

#### **Department of Chemistry**

#### B. Sc. (Chemistry)

## Program specific outcomes (PSOs)

- PSO 1. Analyze chemical structures and reactions, and apply this knowledge to predict properties and behavior.
- PSO 2. Design and conduct experiments to test hypotheses and investigate chemical phenomena.
- PSO 3. Interpret and communicate scientific data and results effectively.
- PSO 4. Apply chemical principles to real-world problems and applications.
- PSO 5. Critically evaluate scientific literature and research in chemistry.
- PSO 6. Apply computational methods and software to chemical problems.
- PSO 8. Synthesize and characterize various organic and inorganic materials.
- PSO 9. Prepare and present scientific reports and presentations.
- PSO 10. Apply knowledge of chemistry to solve problems in fields such as environmental science, medicine, and materials science.

## **Course outcomes (COs)**



## PROGRAM: B.Sc. First Year Chemistry

| Paper | Paper<br>Name | Outcome of Course   |
|-------|---------------|---|
| P1    | Inorganic     | CO 1. Understand the fundamental principles of inorganic chemistry, |

|    | chemistry             | including atomic structure, chemical bonding, and molecular geometry.  CO 2. Identify and explain the properties and reactions of main group elements and their compounds  CO 3. Analyze the structure and properties of solids, including ionic and covalent solids.  CO 4 carryout the basic experiments like boiling point, melting point and sublimation.   |
|----|-----------------------|---|
|    |                       | CO 5. Develop laboratory skills in synthesizing, isolating, and characterizing inorganic compounds.   |
| P2 | Organic<br>Chemistry  | CO 1- Understanding of the structures and properties of basic organic compounds.  CO 2- know about nomenclature of organic compounds  CO 3 – knowledge about electronic displacement effects such as inductive effects, aromaticity, resonance, hyperconjugation.  CO 4 – knowledge about stereochemistry of organic compounds and their spatial arrangements  CO 5 – understanding of stability of compounds, Acids, base and their strengths.  CO 6- Understanding of laboratory techniques such as distillation, extraction, and crystallization  CO 7- Ability to communicate the results of experiments through written laboratory reports |
| Р3 | Physical<br>chemistry | CO 1- Understanding of the fundamental mathematics used in chemistry CO 2- knowledge of solid state, liquid state, gaseous state and colloidal state of matter and solutions. CO 3 - knowledge of nucleus and radiochemistry CO 4- Understanding of the use of thermometers and temperature probes  |

## **PROGRAM: B.Sc. Second Year Chemistry**

| Paper | Paper<br>Name          | Outcome of Course  |
|-------|------------------------|--|
| P1    | Inorganic<br>chemistry | CO 1 Describe the chemistry of transition metals, inner transition elements, including their electronic configuration, oxidation states, and coordination compounds.  CO 2 - Apply principles of acid-base chemistry and redox reactions.  CO 3 - knowledge of chromatography, Gravimetric analyses and reagents used in that process. |
| P2    | Organic<br>Chemistry   | CO 1- Knowledge preparation, properties and reactions of alcohols, acids, carbonyls and nitrogen compounds.  CO 2- understanding of organosulphur compounds and organometallic   |

|    |                       | compounds.  CO 3- Understanding of the use of graduated cylinders, graduated pipettes, and volumetric pipettes for volumetric measurement  |
|----|-----------------------|--|
| Р3 | Physical<br>chemistry | CO 1- knowledge laws of thermodynamics snd understanding of concepts like free energy, entropy, enthalpy etc.  CO 2 – knowledge about electrochemical theories and electrodes, fuel cells, batteries, and laws of electrolyses.  CO 3- understanding of various equillibriums such as chemical, ionic and phase equilibrium. |

## **PROGRAM: B.Sc. Third Year Chemistry**

| Paper | Paper     | Outcome of Course  |
|-------|-----------|--|
|       | Name      |  |
| P1    | Inorganic | CO 1- understanding of hard and soft acids and bases with concept of |
|       | chemistry | symbiosis.   |
|       |           | CO 2 – Knowledge of metal ligand bonding and crystal field theory    |
|       |           | CO 3- Understanding of electronic, magnetic and spectral properties  |
|       |           | of metal complexes.  |
|       |           | CO 4- basic idea about symmetry in objects and their mathematical    |
|       |           | application in chemistry   |
|       |           | CO 5- skills to synthesise complex compounds                         |
| P2    | Organic   | CO 1- knowledge of spectroscopic techniques such as UV, IR and       |
|       | Chemistry | NMR spectroscopy.  |
|       | •         | CO 2 – knowledge of hetrocyclic compounds and photochemistry         |
|       |           | CO 3- understanding of application of syntheses via enolates.        |
|       |           | CO 4 - Ability to determine the structure of organic molecules using |
|       |           | IR and NMR spectroscopic techniques                                  |
|       |           | CO 5 – knowledge of biomolecules such as carbohydrates, amino        |
|       |           | acids, and nucleic acids   |
|       |           | CO 6- knowledge of separation and identification of organic          |
|       |           | compounds and their synthesis.                                       |
| Р3    | Physical  | CO -1 elementary idea of rise of wave mechanichs and quantum         |
|       | chemistry | chemistry and its application to understand molecules.               |
|       | ,         | CO 2 – physical basis of rotational and vibrational spectroscopy.    |
|       |           | CO 3- understanding of photochemical processes, chemical kinetics    |
|       |           | and conductance.   |
|       |           | CO 4 – carrying out experiments of rate of reactions, conductometic  |
|       |           | titrations and all.  |
|       |           | titrations and all.  |

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### **Department of Political Science**

#### **BA** [Bachelor of Arts in political Science]

## Program specific outcomes (PSOs)

**PSO1.** Students understands the introduction to Political Theories about ideas, including freedom, equality, and justice. Political ideas do matter to individuals' life because we act on them also they inform us about our governance institutions.

**PSO2.** The purpose of offering Political Science at under graduate level in our college is to deepen knowledge and understanding of the students about one of the most powerful forces operating on people, communities and corporations today around the world, namely government and politics.

**PSO3.** This knowledge and understanding is valuable for all citizens.

**PSO4.** Political Science is excellent preparation for effective citizenship as it trains the students in the importance of political participation and prepares them to take part in the political life.

**PSO5.** It is also essential in many careers today.

**PSO6.** Develops the understanding of Indian constitution, judiciary system, constitutional bodies and their working in a country,

**PSO7.** Students are able to comprehend about the international relation between india and other countries of world.

**PSO8.** Understanding of world regulatory bodies such as UNO, IMF, WTO etc



### PROGRAM: B.A. First Year Political science

| Paper    | Paper Name                   | Outcome of Course   |
|----------|------------------------------|---|
| Paper- I | Foundations of               | CO1. Understand the basic concept of politics and political   |
|          | Political Science            | theories and their relevance to current scenario.   |
|          |                              | CO2. Understand the concepts of democracy, rights, gender,  |
|          |                              | sovereignty and justice.  |
|          |                              | CO3. Conceptual distinction between nation and nationality,   |
|          |                              | positive and negative liberty, universal and differential citizenship, constitution and constitutionalism.                  |
|          |                              | CO4. Understanding of Executive, Legislature and Judiciary  |
| Paper-II | Indian political<br>thinkers | CO.1 understanding the thoughts of Indian political thinkers such as Manu, Kautilya, Ram Manohar Lohiya, Ambedkar and Nehru |
|          |                              | etc   |

## PROGRAM: B.A. Second Year Political science

| Paper    | Paper Name                 | Outcome of Course  |
|----------|----------------------------|--|
| Paper- I | Modern                     | CO1. Understanding the parliamentary systems of UK, USA,   |
|          | constitutions              | France, Japan and swtzerland   |
|          |                            | CO2. Knowledge of presidential system in US, UK Japan etc.   |
|          |                            | CO3. Examine the structure and organization of government  |
|          |                            | including separation of power and federalism   |
| Paper-II | Indian Political<br>System | CO1. understands the historical development and evolution of the Indian political system                                   |
|          |                            | CO2. Evaluate the role of political institutions such as political parties, interest groups and civil society organiation. |
|          |                            | CO3. Understand the electoral system and the process of democratic representation in India.                                |

## PROGRAM: B.A. Third Year Political science

|          |                   | माम जल्लर<br>राजकीय महाविद्या<br>जिला बासवाः                    |  |
|----------|-------------------|---|--|
| Paper    | Paper Name        | Outcome of Course   |  |
| Paper- I | Western Political | CO1. Understanding the ideas of western political thinkers like |  |
|          | Thinkers          | Plato, Aristotle, Thomas hobbes, John lock, Ruso and Marx.      |  |
|          |                   | CO2. Examine the development of political philosophy from       |  |

ancient to contemporary times.

| Paper-II | International Relations | CO1. Knowledge of international institutions, organizations and regimes, including the UN, EU and WTO.         |
|----------|-------------------------|--|
|          |                         | CO2. Critical thinking and problem-solving skills to address global challenges and crisis.                     |
|          |                         | CO3. Understanding of cultural, economic and political diversity and its impact on international interactions. |

### **Department of English**

B.A. (English literature)

**Pass Course** 



## **Program Specific Outcomes (PSOs)**

- **PSO2.** To facilitate and encourage students to read wisely, acquire knowledge of English Literature from various parts of the world
- **PSO3.** To make students proficient in oral and written communication.
- **PSO4.** To develop communicative competency and enable them to communicate in academic, corporate and government domains.
- **PSO5.** To identify language variations (formal/informal, American/British) and use the appropriate variety in a given context.
- **PSO6.** To help students develop critical and analytical skills in interpreting literary texts.
- **PSO7.** To assist the students from rural area in acquiring intellectual and personal skills which are transferable to a wide range of employment contexts and life experiences.

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## Course Outcomes (COs)

## **B.A. part - I English Literature Pass Course**

| Paper   | Paper Name & Code | Learning Outcome  |
|---------|-------------------|---|
|         |                   | <b>CO1.</b> To help learners understand the popular drama |
| Paper-1 | Drama, Poetry and | of Elizabethan era  |
|         | Grammar           | CO2. To develop the basic Understanding of the            |
|         | (1108)            | Poetic text of Romanticism.                               |
|         |                   | <b>CO3.</b> Learners become known to the famous poetry    |

|         |                   | of Indian English literature and British poetry from         |
|---------|-------------------|--|
|         |                   | Milton to Augustan period.                                   |
|         |                   | <b>CO4.</b> To make students familiar with the basic English |
|         |                   | Language skills and grammar.                                 |
|         |                   | CO1. Students come across with the great essays of           |
| Paper-2 | Prose and Fiction | the great British philosopher Francis Bacon.                 |
|         | (1109)            | CO2. Critically analyze the given essay by Thomas            |
|         |                   | Addison and Thomas Steele.                                   |
|         |                   | <b>CO3.</b> Explain the character and plot construction of   |
|         |                   | the novel, genre, and critically analyze the text            |
|         |                   | Marriage is a Private Affair by Chinua Achebe and The        |
|         |                   | Ransom of Red Chief by O. Henry                              |
|         |                   | <b>CO4.</b> . Explain the character and plot construction of |
|         |                   | the novel, genre, and critically analyze the text            |
|         |                   | Sparrows by K.A. Abbas and The Blue Umbrella By              |
|         |                   | Ruskin Bond.   |

## B.A. part - II English Literature Pass Course

| Paper   | Paper Name & Code | Learning Outcome  |
|---------|-------------------|---|
|         |                   | <b>CO1</b> . Identify the drama, dramatist and genre, explain |
| Paper-1 | Drama             | the summary and critically analyse the drama with             |
|         | (2108)            | reference to the given text.                                  |
|         |                   | <b>CO2.</b> Explain the character and plot construction of a  |
|         |                   | drama, genre and critically analyze the text <i>Macbeth</i>   |
|         |                   | by William Shakespeare.                                       |
|         |                   | <b>CO3</b> . Discuss the character and plot construction and  |
|         |                   | analyze the text A Doll's House by Henrik Ibsen.              |
|         |                   | <b>CO4.</b> Critically examine the character, genre and plot  |
|         |                   | construction of the text <i>Arms and The Man</i> by G.B.      |
|         |                   | Shaw  |

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|         |        | <b>CO1.</b> Identify the poem, poet and genre, explain the     |
|---------|--------|--|
| Paper-2 | Poetry | summary and critically analyze the poem with the               |
|         | (2109) | reference to the given text.                                   |
|         |        | <b>CO2</b> . Critically analyze the poem with reference to its |
|         |        | era/period, genre and literary devices by John Donne,          |
|         |        | Andrew Marvell and Thomas Gray.                                |
|         |        | CO3. Identify the genre of the poem, explain the               |
|         |        | summary and critically analyze the text with                   |
|         |        | reference to its era/period, genre and literary devices        |
|         |        | by William Wordsworth, P.B. Shelley and John Keats.            |
|         |        | CO4. Explain the summary and critically analyze the            |
|         |        | text with reference to its era/period, genre and               |
|         |        | literary devices by Robert Browning, Mathew Arnold,            |
|         |        | W.B. Yeats and T.S. Eliot                                      |
|         |        | CO5. Discuss the theme, genre and Explain the                  |
|         |        | summary and critically analyze the poetic text with            |
|         |        | reference to its era/period, genre and literary devices        |
|         |        | by Rabindra Nath Tagore, Shri Aurobindo and Sarojini           |
|         |        | Naidu  |
|         |        | <b>CO6.</b> Write a short note in about 50 words on the        |
|         |        | given literary devices such as – Sonnet, lyric,                |
|         |        | Ballad ,Simile, Soliloquy, Alliteration etc.                   |



## B.A. part –III English Literature Pass Course

| Paper   | Paper Name & Code | Learning Outcome                                       |
|---------|-------------------|--|
|         |                   | CO1. Explain the character and plot                    |
| Paper-1 | Drama and Poetry  | construction of a drama, genre and critically          |
|         | 3108              | analyze the text <i>The Merchant of Venice</i> by      |
|         |                   | William Shakespeare and <i>The Post Office</i> by R.N. |
|         |                   | Tagore.  |
|         |                   | <b>CO2.</b> Critically analyze the poems – Lycidas by  |
|         |                   | Milton, Alexander's Feast by Dryden, Frost At          |

|         |                         | Midnight by Coleridge and Crossing The Bar by          |
|---------|-------------------------|--|
|         |                         | Tennyson with reference to its era/period,             |
|         |                         | genre and literary devices.                            |
|         |                         | <b>CO3.</b> Identify the poem, poet and genre, explain |
|         |                         | the summary and critically analyze the poem            |
|         |                         | with the reference to the given text.                  |
|         |                         | CO1. Along with famous British Fiction this            |
| Paper-2 | Fiction and Translation | paper also focuses on Indian English Fiction.          |
|         | 3109                    | <b>CO2.</b> Students are able to Explain the character |
|         |                         | and plot construction of the novel, genre, and         |
|         |                         | critically analyze the text Pride and Prejudice by     |
|         |                         | Jane Austen, The Old Man and The Sea by                |
|         |                         | Hemingway, The Serpent and The Rope by Raja            |
|         |                         | Rao and The Coolie by Mulk Raj Anand.                  |
|         |                         | CO3. Learners become able to enhance their             |
|         |                         | skills of translation from Hindi to English and        |
|         |                         | Vice versa.  |
|         |                         | <b>CO4.</b> Write the Phonetic Transcription of the    |
|         |                         | given English words.                                   |

### **Department of Sanskrit**

B.A. (Sanskrit)

COURSE, PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES OF SANSKRIT

### **Programme Outcome:**

POI: Opting Sanskrit as a subject of study in U G classes will enable students to get acquainted with contemporary society and culture.

PO2: Proficiency in the written as well as spoken form of Sanskrit language will be achieved.

PO3: High moral values elaborated in the prescribed texts will lead to character building and heightened awareness towards humanity that will help them become aware citizens of the world community.

PO4: They will grow into strong personalities ready to face challenges of the world.

PO5: Intellectual, emotional as well as spiritual quotient will evolve in the students.

PO6: Sanskrit being on the list of subjects for the UPSC and state Public Service exams, the students will be able to apply for these highly prestigious jobs.

### Programme Specific Outcomes: UG

PSOI: Students will get o know Sanskrit as an ancient language full of a storehouse of knowledge in almost every field of knowledge as we see today.

PSO2: They will also be able to understand its utility and contribution to the current world streams of knowledge. PSO3: Along with this, they will also learn the applied aspect of our ancient knowledge.

PSO4: While studying various forms of literature viz. drama, poetry, stories, novels etc., students will be able to learn life lessons along with enjoying the texts.PSO5: Applied aspect of this study will enable them to pursue higher study in the field of their choice and earn livelihood.

## Course outcomes (COs)

### PROGRAM: B.A. First Year Sanskrit

| Paper    | Paper                                 | Outcome of Course   |
|----------|---------------------------------------|---|
| _        | Name                                  |   |
| Paper- I | Kavya Natak<br>& prayogik<br>vyakaran | CO1. Complete introduction of Sanskrit Drama ans Poetic style of Mahakavi Bhas. Knowledge of contemporaneous Social conditions. Human values, Environmental protection and soul mate with living organisms,knowledge of 'Prakrit' language and its Sanskrit Version. CO2. Knowledge of moral values and thoughts,inspiration to assimilation.  CO3. Ability to compose sentences by own using knowledge of 'Vachyas' and 'Pratyayas'. |
| Paper-II | Gadya ,<br>vyakaran &<br>anuvaad      | CO.1 Knowledge of Sanskrit Literature's Katha Sahitya. Contemporaneous political conditions and human nature.  CO.2 Moral upliftment through moral didactic stories through Hitopadesha  CO.3 Capacity to understand fandamentals of Panini's Grammer. Enhance Knowledge of 'Samas' based on 'Laghusidhantkaumudi.'  CO.4 Ability to get the meaning of Texts by themselves according to the rules of 'Karakas'.                      |



### PROGRAM: B.A.. Second Year Sanskrit

| Paper    | Paper Name  | Outcome of Course   |
|----------|---|---|
| Paper-   | Natak , Chhand & Alankar  | CO.1 Knowledge of environmental protection from Kalidasa's description of nature  |
|          |   | CO.2 Knowledge of Sanskrit Literature's Alankaras (Figure of seech). Capacity to understand meaning of Literary words and Poet's expressions.   |
|          |   | CO.3 Knowledge of Sanskrit 'Chhandas' (Verse). Capacity to understand rhythm, motion and composition.   |
| Paper-II | Prachin bharatiya sanskriti ,<br>Dharmshstra ,vyakaran , anuvaad<br>& nibandh | CO.1 Knowledge of Paniniya'sVyakaran.  CO.2 Translation's ablity of simple sentences from Hindi to Sanskrit and Sanskrit to Hindi.  CO.3 Knowledge of cultural and spiritual values of Indian culture  CO.4 Knowledge of political system, human values, morality, Guru tradition described in Manusmriti |



### PROGRAM: B.A. Third Year Sanskrit

| Paper    | Paper Name   | Outcome of Course   |
|----------|--|---|
| Paper- I | Vaidik loakik<br>kavya and<br>Gadya                | CO.1 introduction of Vaidicvanmaya's Ved, Brahman, Aranyak, Upnishadas and Vedangas. History of Laukik Sanskrit Sahitya and its different modes (vidha) |
|          |  | CO.2 Knowledge of VaidicDevtas and Mantradrashta Rishis Through VaidicSuktas.   |
|          |  | CO.3 General introduction of Upanishadas. Knowledge of Kathopnishad and classical explanation of its special terminology.                               |
|          |  | CO.4 Knowledgeof Sanskrit Literature's 'GadyaVidha' specily in the context of MahakaviBanabhatta's poetic style.  |
| Paper-II | Itihas Darshan<br>anuvaad<br>vyakaran &<br>nibandh | CO.1 Understanding Structure and thoughts of Shrimadbhagavadgeeta. Specialy The topic of Gyanyoga and Karmayoga.  |
|          |  | CO.2 General Knowledge of Indian Philosophy. Ability to understand Padharthvichar, Pramans of Nyay- Vaisheshik.   |
|          |  | CO.3 Ability to translation from Hindi to Sanskrit and Sanskrit to Hindi.Paragraph writing in Sanskrit.   |
|          |  | CO.4 Ability to write essay in Sanskrit   |



### **B.Sc.** (Mathematics)

# Program specific outcomes (PSOs)

**PSO1.** Understand the fundamental laws and principles of physics, including mechanics, thermodynamics, electromagnetism, and quantum mechanics.

**PSO2.** Apply mathematical tools to solve physical problems and analyze data.

**PSO3**.. Develop problem-solving skills, including identifying problems, designing solutions, and optimizing performance

**PSO4**.. Understand the role of physics in addressing societal challenges, such as energy, environment, and health.

**PSO5**. Critically evaluate physical phenomena and systems, and develop evidence-based arguments.

**PSO6**. Develop skills in computational physics, including numerical methods and simulation techniques

# Course outcomes (COs)



## PROGRAM: B.Sc. First Year PHYSICS

| Paper | Paper | Outcome of Course |
|-------|-------|-------------------|

|           | Name                                  |   |
|-----------|---------------------------------------|---|
| Paper- I  | Mechanics                             | CO1. Understanding laws of motion, pseudo forces and its application.   |
|           |                                       | CO2. Understanding concept of centre of mass, gravitation and its various practical applications.   |
|           |                                       | CO3. Understanding elasticity & various methods to determine elastic constants.   |
|           |                                       | CO4. Understanding various principle and concept of fluid mechanics.  |
| Paper-II  | Electricity &                         |   |
|           | Magnetism                             | CO1. Understanding concept of electric field and how to determine magnitude and direction of electric field foe a given object.                     |
|           |                                       | CO2. Understanding concept of electric field and how to determine magnitude and direction of electric field foe a given object.                     |
|           |                                       | CO3. Understanding various concept of electromagnetic induction, Faradays law and method to determine the coefficient of self and mutual induction. |
| Paper-III | Oscillations,<br>waves &<br>Acoustics | CO1. Understanding concept of undamped, damped and forced oscillations.   |
|           |                                       | CO2. Understanding various concepts related to waves like frequency, organ pipe, Acoustics beats etc.   |
|           |                                       | CO3.Understanding Fourier series and its application  |

### PROGRAM: B.Sc. Second Year PHYSICS

| Thermodynami cs & Statistical mechanics | CO1. Understanding the laws of thermodynamics and its application like carnot engine, refrigerator etc.   |   |
|---|---|---|
|   | CO2.Understanding concept of ideal gas, real gas, entropy, various thermodynamics process.  |   |
|   | CO3.Understanding basic concept of Statistical mechanics like thermodynamic probability, classical and quantum statistics, partition function etc | 1   |
|   | cs & Statistical  | cs & Statistical mechanics  application like carnot engine, refrigerator etc.  CO2.Understanding concept of ideal gas, real gas, entropy, various thermodynamics process.  CO3.Understanding basic concept of Statistical mechanics like thermodynamic probability, classical and quantum statistics, |



| Paper - II  | Electronics | CO1. Understanding basics laws and theorem of electronics like Ohm's law, Thevenin's theorem, Nortan's theorem, superposition theorem, maximum power transfer theorem.  CO2.Understanding principle and working of various electronic devices like Hartley, Colpitts oscillator, operational amplifier and their practical applications.  CO3. Understanding various number system (binary, decimal octal, hexadecimal and their interconversion) |
|-------------|-------------|---|
| Paper - III | Optics      | CO1. Understanding various concept of interference (definition, coherent sources, constructive and destructive interference, Young's double slit experiment)  CO2. Understanding various concept of diffraction (definition, example, Fresnel and Fraunhofer diffraction)  CO3. Understanding various concept of polarization (definition, example, linear, circular and elliptical polarization)   |

### PROGRAM: B.Sc. Third Year PHYSICS

| Paper - I | Quantum<br>Mechanics & | CO1. Understanding origin of quantum mechanics (black body radiation, photoelectric effect, Compton effect, Raman effect)  |
|-----------|------------------------|--|
|           | Atomic                 |  |
|           | Molecular<br>physics   | CO2. Understanding basic concept of quantum mechanics which includes wave function, probability amplitude and their determination for various systems (infinite and finite one dimensional box, simple harmonic oscillator, hydrogen atom) |
|           |                        | CO3. Understanding rotational, rotational – vibrational and electronic spectra.  |



| Paper -<br>II | Solid state &<br>Nuclear Physics | CO1. Understanding concept of lattice, bravias and crystal structure and various method to determine crystal structure, Bragg's law. |
|---------------|----------------------------------|--|
|               |                                  | CO2. Understanding various concept related to semiconductor (conduction in semiconductor, Hall effect, bloch theorem)                |
|               |                                  | CO3. Understanding basic concept of nuclear physics, accelerator, detector, radioactivity and elementary particles.                  |
| Paper -       | Electrodynamics                  | CO1. Understanding motion of particles under electric and magnetic   |
| III           | Licetrodynamics                  | field.   |
|               |                                  | CO2. Understanding Maxwell equation for electromagnetic waves in free space and conducting media.                                    |
|               |                                  | CO3. Understanding concept of special and general theory of relativity.  |



# **DEPARTMENT OF HISTORY**

## **BA PART III**

#### **Programme Outcome:**

Upon completion of the programme, students will:

- 1. Develop a profound understanding of India's cultural heritage, spanning historical, philosophical, andreligious dimensions.
- 2. Analyze ancient Indian societies, including the Indus civilization, Vedic age, and major philosophical traditions like Vashnavism, Shaivism, and Shaktism.
- 3. Evaluate the teachings and contributions of significant religious movements such as Buddhism, Jainism, Bhakti, and Sufism, along with assessing the impact of Islam on Indian culture.
- 4. Explore the literary landscape of India, including Vedic literature, epics like Ramayana and Mahabharata, and the works of prominent literary figures.
- 5. Examine advancements in science and technology during ancient India, recognizing notable figures and their contributions.
- 6. Gain insights into the evolution of Indian art and architecture, encompassing Stupa art, sculpture, temples, and paintings.
- 7. Understand the significance of ancient Indian centers of education and recognize the contributions of the Sangam Age.
- 8. Analyze foreign travelers' accounts to comprehend diverse perspectives on Indian culture.
- 9. Acquire a comprehensive understanding of the Renaissance, Reformation, and Age of Enlightenment, exploring their meanings, causes, and cultural developments.
- 10. Analyze Mercantilism, the Commercial Revolution, and the beginnings of colonialism, understanding their economic implications and global impact.
- 11. Investigate the Industrial Revolution, American War of Independence, and the causes and impact of the French Revolution.
- 12. Explore the Vienna Congress, Metternich System, and the dynamics of the French Revolution of 1848.
- 13. Study the processes of unification in Italy and Germany, along with the Eastern Question, Crimean War, Berlin Settlement, and the American Civil War.



- 14. Evaluate the causes and results of imperialism in Asia and Africa, examining the First World War and the Russian Revolution of 1917.
- 15. Analyze the rise of Fascism and Nazism, along with the League of Nations, its aims, achievements, and failures.



- 16. Investigate the causes and impacts of the Second World War, the birth and achievements of the United Nations, and the emergence of modern China, Japan, and Turkey.
- 17. Understand the dynamics of the Cold War and the principles behind the non-alignment movement.

By the end of the programme, students will possess a comprehensive understanding of the cultural heritage of India and the key events that shaped the modern world, enabling them to critically analyze and interpret historical, cultural, and global dynamics.



## **Course Outcome**

#### Course Name: Cultural Profile of India

Upon completion of this course, students will:

- 1. Develop a comprehensive understanding of the cultural profile of India, encompassing its historical, philosophical, and religious dimensions.
- 2. Analyze and interpret key aspects of ancient Indian societies, including the Indus civilization, Vedic age, and the evolution of major philosophical traditions such as Vashnavism, Shaivism, and Shaktism.
- 3. Evaluate the teachings and contributions of major religious movements such as Buddhism, Jainism, Bhakti, and Sufism, as well as the impact of Islam on Indian culture.
- 4. Explore the literary landscape of India, including Vedic literature, epics like Ramayana and Mahabharata, and the works of prominent literary figures such as Kautilya, Manu, Kalhan, Banabhatt, Bhrathari, and Kalidas.
- 5. Examine the advancements in science and technology during ancient India, highlighting notable figures such as Aryabhatta, Varahmir, Nagarjun, Bhramgupta, Charak, and Sushruta.
- 6. Gain insights into the evolution of Indian art and architecture, including Stupa art, Gandhar and Mathura sculpture, Gupta Age temples, Nagar, Dravid styles of temple architecture, and Ajanta paintings.
- 7. Understand the significance of prominent centers of education in ancient India, such as Takshashila, Nalanda, Ujjain, and Kanchi, and recognize the contributions of the Sangam Age.
- 8. Analyze foreign travelers' accounts, including those of Megasthenes, Hiuen Tsang, Al-Biruni, and Marco Polo, to comprehend diverse perspectives on Indian culture.

By the end of the course, students will have a holistic understanding of India's rich cultural heritage and its multifaceted contributions to philosophy, religion, literature, science, technology, art, and architecture.



#### **Course Outcome:**

## Course Name: Outline History of Modern World

Upon completion of this course, students will:

- 1. Acquire a comprehensive understanding of the Renaissance, exploring its meaning, causes, and the development of art and literature during this period.
- 2. Analyze the Reformation and the Age of Enlightenment, evaluating the socio-cultural shifts and intellectual developments that characterized these historical periods.
- 3. Examine Mercantilism and the Commercial Revolution, understanding their economic implications and impact on global trade.
- 4. Explore the beginnings of colonialism and its historical significance, recognizing the forces that drove European expansion.
- 5. Investigate the Industrial Revolution, analyzing its causes, changes in agriculture and industry, and thetransformative results it brought about. Study the American War of Independence and its historical

significance.

- 6. Understand the causes and impact of the French Revolution, including the role of Napoleon Bonaparte, his conquests, and reforms.
- 7. Analyze the Vienna Congress and the Metternich System, along with the French Revolution of 1848and its broader implications.
- 8. Explore the processes of unification in Italy and Germany, along with the Eastern Question, CrimeanWar, and the Berlin Settlement. Investigate the American Civil War and its consequences.
- 9. Evaluate the causes and results of imperialism in Asia and Africa. Examine the First World War, the Russian Revolution of 1917, and the Paris Peace Settlement.
- 10. Study the rise of Fascism and Nazism, understanding their ideological foundations and impact on the geopolitical landscape.
- 11. Analyze the League of Nations, its aims, achievements, and failures. Investigate the causes and impacts of the Second World War.
- 12. Understand the birth, organization, and achievements of the United Nations (U.N.O.). Explore the emergence of modern China, Japan, and Turkey.



13. Analyze the dynamics of the Cold War and the principles behind the non-alignment movement.

By the end of the course, students will have a profound understanding of the key events, movements, and transformations that shaped the modern world, enabling them to critically analyze and interpretglobal history.

प्रामार्था यं मामा बालेज्वर दयाल राजकीय महाविद्यालय कुशलगढ़ जिला बांसवाड़ा ( राज.)

# BA PART-II

#### **Program Outcome:**

Upon successful completion of the programme students will:

- 1. Acquire a comprehensive understanding of India's historical evolution, spanning the arrival of Europeans, British supremacy, and the socio-political, economic, and cultural dynamics leading to independence.
- 2. Develop expertise in analyzing diverse historical sources, including literary, archaeological, archival, and foreign travelers' accounts, providing a nuanced understanding of the historical narratives of bothIndia and Rajasthan.
- 3. Analyze key events and developments, such as the Carnatic wars, Battles of Plassey and Buxar, the Doctrine of Lapse, the Uprising of 1857, and constitutional developments from 1773 to 1935, enabling students to critically interpret India's modern history.
- 4. Explore the interactions between regional powers, the rise of the middle class, and the growth of Indian nationalism, along with gaining insights into the early civilization, major dynasties, and significant regions within Rajasthan.
- 5. Investigate social reform movements, women's empowerment efforts, and developments in education, press, land revenue settlements, and economic issues, fostering an understanding of the multifaceted aspects shaping India's and Rajasthan's histories.
- 6. Understand the political landscape with the establishment of political associations, the Indian National Congress, and the emergence of political parties, including the Swaraj Party, Congress Socialists Party, and Communist Party of India.
- 7. Analyze pivotal moments in the path to independence, including various missions and acts, the rise of communalism, and the partition of India, alongside understanding the accession and integration of

Indian states into the newly independent nation.



- 8. Gain insights into the early civilization in Rajasthan, the origin of Rajputs, major dynasties, and figures shaping the region's early history.
- 9. Explore the architectural marvels and paintings of Rajasthan's forts, religious trends, and the impact of Maratha penetration on Rajasthan's history.
- 10. Investigate peasant and tribal movements, constitutional developments in Rajasthan, and economicaspects such as trade, commerce, and administrative structures, providing students with a holistic understanding of Rajasthan's historical and cultural heritage.

By the end of the programme, students will possess the analytical and interpretative skills to critically evaluate the historical narratives of Modern India and Rajasthan, contributing to a well-rounded comprehension of the socio-political, economic, and cultural dynamics in these regions.

प्राप्तार्खा र्यं प्राप्तार्खा र्यं प्राप्ता बालेश्वर दयाल राजकीय महाविद्यालय कुणलगढ़ किला बांगवाडा ( राज. )

#### **Course Outcome**

Course Name: History of Modern India (From 1700 CE to 1950 CE)

Upon successful completion of this course, students will:

- 1. Acquire a comprehensive understanding of the historical events leading to the arrival of Europeans and the establishment of British supremacy in India, including the Carnatic wars, Battles of Plassey and Buxar.
- 2. Analyze the interactions between regional powers such as the Marathas, Mysore, Punjab, Awadh, and the British. Evaluate the policies of Lord Wellesley, including the implementation of the Subsidiary

Alliance, and Lord Dalhousie, with a focus on the Doctrine of Lapse.

- 3. Evaluate the Uprising of 1857, analyzing its causes, nature, and consequences. Examine the administrations of Lord Lytton and Lord Ripon, as well as peasant and tribal movements during this period.
- 4. Explore the rise of the middle class and the growth of Indian nationalism. Understand constitutional developments from 1773 to 1892, including key milestones.
- 5. Investigate the Social Reform Movement and women's empowerment efforts by both Indian and British entities. Analyze the development of Western education, the growth of English and vernacularpress from 1813 to 1947. Evaluate various land revenue settlements such as permanent, ryotwari, and mahalwari, and examine issues like the drain of wealth, commercialization of agriculture, rural

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प्राप्तार्खार्य

indebtedness, famines, and industrialization.

- 6. Understand the political landscape with the establishment of political associations and the Indian National Congress. Analyze the philosophies of moderates, extremists, Gandhian philosophy, and pivotal events like the Partition of Bengal and the Swadeshi Movement.
- 7. Explore the Home Rule Movement, revolutionary activities in India and abroad. Analyze Gandhian movements, including the Non-Cooperation Movement, Civil Disobedience Movement, and Quit IndiaMovement. Understand constitutional developments from 1909 to 1935.

- 8. Examine the emergence of political parties such as the Swaraj Party, Congress Socialists Party, and Communist Party of India. Analyze the role of Subhash Chandra Bose and the Indian National Army, as well as the Royal Indian Navy Mutiny.
- 9. Evaluate key moments in the path to independence, including the August Offer, Cripps Mission, WavellPlan, Cabinet Mission, Mountbatten Plan, and the Indian Independence Act.
- 10. Analyze the rise of communalism and the partition of India. Understand the accession and integration of the Indian states into the newly independent nation.

By the end of the course, students will have a deep understanding of the socio-political, economic, and cultural dynamics leading to India's independence, enabling them to critically analyze and interpret this crucial period in history.

प्रामाधीयं मामा बालेश्वर दयाल राजकीय महाविद्यालव कुशलगढ़ जिला बांसवाड़ा ( राज. )

#### **Course Outcome**

Course Name: Outline History of Rajasthan

Upon completion of this course, students will:

- 1. Develop expertise in analyzing diverse sources, including literary, archaeological, and archivalmaterials, to unravel the historical narratives of Rajasthan.
- 2. Gain insights into the early civilization in Rajasthan, with a focus on archaeological sites like Kalibangaand Aahad.
- 3. Understand the origin of Rajputs and major dynasties that shaped the early history of Rajasthan.
- 4. Analyze the early history of Chauhans, with particular attention to figures like Prithviraj III.
- 5. Explore the emergence of significant regions within Rajasthan, including Mewar (Kumbha, Sanga, Udai Singh, Pratap, Raj Singh), Marwar (Jodha, Maldeo, Chandra Sen), and Amer (Man Singh, Mirza Raja Jai Singh, Sawai Jai Singh).
- 6. Investigate Rajput paintings and the architectural marvels of Rajasthan's forts, including Kubhalgarh, Mehrangarh, and Chittorgarh.
- 7. Examine the religious trends in medieval Rajasthan, encompassing Bhakti and Sufi cults that influenced the cultural landscape.
- 8. Analyze the impact of Maratha penetration and Rajput resistance, along with the treaties of 1818, exploring their causes and implications.
- 9. Understand the role of Rajasthan in the Uprising of 1857 and the underlying causes of political awakening in the region.
- 10. Investigate peasant and tribal movements, including the Bhil and Bijolia Movement, as well as the Prajamandal Movement. Analyze constitutional developments in Rajasthan, leading to the formation of the Rajasthan State.
- 11. Explore the economic aspects of Rajasthan, including trade, commerce, and administrative structures.

By the end of the course, students will have a comprehensive understanding of the historical, cultural, and socio-political developments in Rajasthan, enabling them to critically analyze and interpret the richhistory of this region.

# <u>BA</u> <u>PART-1</u>

#### **Programme Outcome**

Upon completion of the courses "History of Ancient India" and "History of Medieval India," students will:

- 1. Master the art of surveying and analyzing historical sources, including literary, archaeological, and foreign travelers' accounts, providing them with the skills to critically interpret various aspects of thepast.
- 2. Demonstrate a comprehensive understanding of human development, tool techniques, and the cultural evolution from the Paleolithic to the medieval eras, spanning prehistoric and medieval India.
- 3. Analyze the complexities of ancient civilizations, such as the Harappan, Vedic, Mauryan, Gupta, and post-Gupta periods, including their origin, urban planning, political organization, religious beliefs,

economic structures, and decline.

- 4. Evaluate cultural, societal, and political transformations during significant periods, including theemergence of religious movements, the post-Mauryan era, and the Bhakti Movement.
- 5. Explore the historical developments in South India, encompassing megalith culture, the Sangam Age, and the post-Gupta kingdoms, providing insights into social, economic, and cultural dynamics.
- 6. Gain proficiency in analyzing medieval historical sources, comprehending key events and developments during Early Medieval India, the Tripartite Struggle, and Arab invasions, including theimpact of Mahmood Ghaznavi and Muhammad Gori.
- 7. Understand the foundation and consolidation of the Sultanate, analyze Alauddin Khalji's conquests, and explore the Sultanate period's societal and economic aspects, along with the emergence of regional empires like Vijaynagar and Bahmani.



- 8. Examine the establishment, expansion, and decline of the Mughal Empire, investigating Later Mughals, Mughal relations, and the rise of Maratha power, with a focus on Shivaji and his conquests.
- 9. Analyze the nature of the Mughal state, including its administrative structure, social classes, and economic systems, along with exploring the flourishing art, architecture, and literature during the Mughal period.
- 10. Evaluate the religious policy of the Mughals, emphasizing the composite culture emerging fromBhakti and Sufi movements.



#### Course Name: HISTORY OF ANCIENT INDIA

#### **Course Outcome**

Upon successful completion of this course, students will:

- 1. Master the survey of historical sources, including literary, archaeological, and foreign travelers'accounts, to analyze and interpret the past.
- 2. Demonstrate a comprehensive understanding of human development, tool techniques, and the Paleolithic, Mesolithic, and Neolithic cultures during prehistoric times.
- 3. Analyze the origin, urban planning, political organization, religious beliefs, economic organization, and decline of the Harappan civilization, as well as the Neolithic-Chalcolithic cultures outside the Indus system.
- 4. Evaluate Vedic culture, including its polity, economy, society, and religion, and comprehend the rise of Magadha and foreign invasions, with a focus on Alexander and their impact.
- 5. Explore the age of religious movements, covering the material background, use of the iron plough, and the emergence of Jainism and Buddhism. Examine the Mauryan Age, including administrative machinery, economic policies, society, religion, Ashoka's dhamma, Mauryan art and architecture, and the decline of the empire.
- 6. Investigate the post-Mauryan Age, including indigenous kingdoms, foreign powers (Indo-Greeks, Shakas, Parthians, Kushanas), trade, economic organizations, society, religion, art, and architecture.
- 7. Understand the history of the far south, encompassing megalith culture and the Sangam Age, with a focus on literature, polity, society, and economy. Analyze the Gupta Age, including its art and architecture, literature, science and technology, philosophy, state and administration, society, and economy.
- 8. Examine post-Gupta kingdoms in North India, such as Maitrakas, Yashodharman, later Guptas, Maukharis, Gauda dynasty, and Vardhanas. Explore travel accounts of Fa-Hian and Hiuen-Tsang.



- 9. Investigate post-Gupta kingdoms in South India, including the Chalukyas, Pallavas, and Pandyas. Analyze social, economic, and cultural developments post-Gupta and understand the rise of feudalismand its characteristics.
- 10. Explore the Bhakti Movement, focusing on Alvars and Nayanars, and gain insights into ancient Indianuniversities such as Takshashila, Nalanda, Vikramshila, and Valabhi.

By the end of the course, students will possess a comprehensive understanding of the historical, cultural, and societal developments in ancient India, enabling them to critically analyze and interpret various aspects of the past.

