

Internal Quality Assurance Cell
R.D.B.M College, Deoghar (Jharkhand)
(Sido Kanhu Murmu University,
Dumka)



Program Outcomes (POs),
Program Specific Outcomes (PSOs)
And
Course Outcomes (COs)
(2020-2021)

Email: rbdmcollegedeoghar@gmail.com

Program Outcomes (POs)

Program Name: B. Sc Zoology

Department: Zoology

- PO 1:** Students gain acquaintance and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms. Analyse complex interactions among the various animals of different phyla, their distribution and their relationship with the environment.
- PO 2:** Apply the knowledge of internal structure of cell and its functions in control of various metabolic activities of organisms. Understands the complex evolutionary processes and behaviour of animals. Correlates the physiological processes of animals and relationship of organ systems
- PO 3:** Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species. Gain knowledge of Agro based Small Scale industries like sericulture, fish farming, butterfly farming and vermi compost preparation.
- PO 4:** Understands about various concepts of genetics and its importance in human health. Apply ethical principles and commit to professional ethics and responsibilities in delivering his duties.
- PO 5:** The students also acquire skills in both the theoretical and practical aspects. Field studies and excursion imprint concepts of teamwork as well as life on the outdoors.
- PO 6:** Apply the knowledge and understanding of Zoology to one's own life and work and Develops responsiveness and love towards the animals.

Department of Zoology

Program Specific Outcomes (PSOs)

PSO 1: Understand the nature and basic concepts of zoological taxonomy (detailed study of classification of vertebrate and invertebrate), cell biology, genetics, taxonomy, physiology, ecology and applied Zoology.

PSO 2: Analyse the relationships among animals, plants and microbes. 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, Immunology and research methodology.

PSO 3: Understand the applications of biological sciences in Apiculture, Aquaculture, Agriculture and Medicine. Gains knowledge about research methodologies, effective communication and skills of problem solving methods.

PSO 4: The specific outcomes of the programme are on several dimensions. They enhance the chances for students to progress for higher education like MSc, BEd and PhD. On the other dimension the programme is versatile enough to ensure that students be successful in different competitive examinations. This course also trains students in the field of applied zoology like sericulture, apiculture etc.

PSO 5: Provide advanced knowledge on topics in latest developments in the fields of Animal Sciences, empowering the students to pursue higher degrees at reputed academic institutions.

PSO 6: Nurture problem solving skills, thinking, creativity through assignments, project work. Contributes the knowledge for Nation building.

Course Outcomes (COs)

SEMESTER 1

Paper	Course title	Course code	Course outcomes
Core 1	Animal diversity (Non chordates)	ZOO-101C	• This classical zoology paper imparts concepts of animal classification as well as different features on the diversity of animal life.
			• Classify Protozoa to Annelida up to order using examples.
			• Type study of from each phylum from protozoa to Annelida.
			• Study of nutrition and reproduction from each phylum.
			• Study of canal system, parasitic adaptation and excretory system from respective invertebrate phylum.
Core 2	Animal diversity (Non Chordates and Animal Behaviour)	ZOO-102C	• This imparts knowledge of phylum Mollusca with type study. Study of Torsion and detorsion in gastropods indicates the symmetry and important adaptation of this class
			• Study of Peripatus, mouth parts of Arthropoda and crustacean larvae is important to gain knowledge all about phylum Arthropoda.
			• Larval form of echinoderms and water vascular system in starfish showed a brief understanding of phylum Echinodermata
			• Scope and concept of animal behaviour is important to understand the innate and learned behaviour in all organism like termites, bees and birds
			• Nesting and brooding in birds is important to know about the behavioural trait of birds.

SEMESTER 2

Paper	Course title	Course code	Course outcomes
Core 3	Animal diversity (Chordates)	ZOO-203C	<ul style="list-style-type: none"> • Concept and definition of the Chordate group. Collaboration of structure and function. • Relationships of the Chordates with such other animal groups/Phyla. Evolution and functional relationships of particular organ/structure/feature. • Learning to identify the Chordates and inter linking different strata of organizations of the Chordate Tissue and Organ systems. • Ability to generate hypothesis in Chordate structures to analysis the diversity of functions and their relations with the environment. • Facility in solving real life problems by thinking logically and outside of box.
Core 4	<p>A. Comparative anatomy of vertebrates</p> <p>B. Ecology and environmental biology</p>	ZOO-204C	<ul style="list-style-type: none"> • To study the comparative anatomy of heart, integument, aortic arches and urogenital system. • This course impart the different principles of ecology and environment. • Concept of biosphere and ecosystem give knowledge about environment. • Concept of flow of energy in ecosystem. • Community structure and ecological succession. Wild life management information. These all information is very important for awareness among students.

SEMESTER 3

Paper	Course title	Course code	Course outcomes
Core 5	Biostatistics	ZOO-305C	• Imparts conceptual knowledge of scope of biostatistics
			• Imparts conceptual knowledge of mean, mode and median.
			• Imparts conceptual knowledge of standard deviation and error
			• Imparts conceptual knowledge of students t test
			• Imparts conceptual knowledge of chi square test
Core 6	Evolution	ZOO-306C	• Origin and evolution of organism on earth.
			• Hereditary variation and role in evolution.
			• Concept of isolating mechanism and its role in evolution.
			• Speciation and natural selection
			• Theories of Evolution and knowledge of eras and evolution of species.
Core 7	Biochemistry	ZOO-307C	• Impart knowledge of the structure and properties of biomolecules, metabolic and biochemical processes are studied in this course
			• To make understanding about different monomeric units their source, structure, function in different biological systems. Structural abnormalities and disease in animals.
			• Concept of biosynthesis, bioenergetics, metabolism and biotransformation of individual biomolecules
			• Understanding the role of biomolecules in the functioning of cell as a whole and interlinking of various pathways related to biosynthesis, bioenergetics, metabolism and biotransformation
			• Understanding the relationship that exists between structure and function of individual biomolecules

Email: rdbmcollegedeoghar@gmail.com

SEMESTER 4

Paper	Course title	Course code	Course outcomes
Core 8	Palaeontology	ZOO-408C	• Students learn the concepts of fossils and fossil formation.
			• Students learn the concepts of geological time scale and distribution of animals.
			• Students learn the concepts of phylogeny of horse.
			• Students learn the concepts of phylogeny of man
			• Students learn the concepts of all about palaeontology.
Core 9	Genetics	ZOO-409C	The principles of inheritance are dealt in this course
			• Gene concept, genome organization, Site specific recombination and its applications are taught in this. Gene regulation, concept of mobile genetic elements and applications, concept of gene mapping and Molecular diagnosis of Genetic disorders are dealt in this topic.
			• Students learn the concepts of Mendelian law and test.
			• Students learn the concepts of linkage and crossing over.
Core 10	Molecular biology	ZOO-410C	• Imparts conceptual knowledge of DNA structure and types.
			• Imparts conceptual knowledge of DNA of replication.
			• Imparts conceptual knowledge of DNA damage and repair.
			• Imparts conceptual knowledge of RNA and its types.
			• Imparts conceptual knowledge of transcription and genetic code with gene regulation.

SEMESTER 5

Paper	Course title	Course code	Course outcomes
Core 11	A. Toxicology B. Biotechnology C. Zoogeography	ZOO-511C	<ul style="list-style-type: none"> Imparts the basic concepts of toxicology. Basic concepts of acute, subacute and chronic toxicity test Imparts the basic concepts of toxicants of public health Give understanding of recombinant DNA technology. Give understanding of transgenic animals. Give understanding of zoogeographical realms of world.
Core 12	A. Endocrinology and Reproductive Biology B. Cell Biology	ZOO-512C	<ul style="list-style-type: none"> Give understanding of anatomy of anterior and posterior pituitary. Give understanding of menstrual and oestrous cycle. Give understanding of neuroendocrine system of vertebrate and invertebrate. Give understanding of hormonal regulation of gametogenesis. Give understanding of human genetic disorder, cell cycle and chromatin fibre.
DSE 1	<u>Economic Zoology</u> Unit 1: Bee Keeping and Bee Economy Unit 2: Sericulture Unit 3: Aquaculture Unit 4: Dairy/Poultry Farming Unit 5: submission of report	DSE -1	<ul style="list-style-type: none"> Give understanding of This topics give understanding of methods of bee keeping and economy Give understanding of types of silkworm and its culture. Give understanding of fish farming and poultry farming. Give understanding field report preparation.
DSE 2	<u>Biostatistics</u> Unit 1: Sampling (Data collection) Unit 2: Classification and Tabulation Unit 3: Representation of data Unit 4: Measurement of central tendency Unit 5: measurement of variation. Unit 6: test of significance	DSE-2	<ul style="list-style-type: none"> Give understanding of basic application of statistics in biology. Give understanding of data preparation. Give understanding of representation of data. Give understanding of measurement of central tendency Give understanding of variation and test of significance with its application in biological data.

SEMESTER 6

Paper	Course title	Course code	Course outcomes
Core 13	A. Applied and Economic Zoology B. Immunology	ZOO-613C	• This paper deals with the application of Zoology for commercial purposes.
			• This paper deals with the application of sericulture and lac culture.
			• This paper deals with the application of pearl and prawn culture.
			• This paper deals with immunity.
			• This paper deals with the application of immune mechanisms in disease control.
Core 14	A. Mammalian Physiology B. Developmental Biology	ZOO-614C	• This dealt with human physiology.
			• Understand all about blood.
			• Respiratory, digestive and excretory system of human.
			• Seeks to understand organogenesis.
			• This topic dealt with types of egg and cleavage pattern, gastrulation in frog and chick, extra embryonic membranes and placenta in mammals.
DSE 3	<u>Wildlife conservation and management (total Unit-04)</u>	DSE 3	• Biodiversity and conservation explore natural landscapes, species and ecosystems.
			• Types of biodiversity.
			• Key threats to biodiversity, including habitat modification and loss.
			• Management actions that are used to mitigate threats to biodiversity.
			• Biodiversity and Conservation increase awareness and understanding for preserving animal species and natural ecosystems.
DSE 4	<u>Agrochemical and pest management (total unit -04)</u>	DSE 4	• This topic imparts the information about basics of pest management.
			• This topic imparts the practical approaches of pest management.
			• This topic imparts the vision towards agrochemicals.
			• This topic imparts the technical knowledge of pest identification.
			• This topic imparts the information of remedy from pest problems.