

UNDERGRADUATE PROGRAMME

B.Sc.

Programme Outcomes (POs)

At the end of the completion students are able to attain the following attributes

- **Critical thinking:** Undergraduate program syllabus for different courses is designed by Board of Studies of Hemchand Yadav University, Durg. The combination of different subjects in the courses in graduation level leads to knowledge gathering of students. They develop critical thinking about the subject and are able to check the assumptions and ideas from different perspectives.
- **Effective communication:** Foundation course includes two language papers as Hindi language and English language in the undergraduate programme, which aims for development of communication skills. The students will be able to communicate with people, express ideas through books, media and technology.
- **Social interaction:** In UG programme, the courses include practical's and most of the subjects includes field excursion, and field studies, industrial visits which assist students for participative discussions and interactions with experts, professionals, industrialists, entrepreneurs, social activists etc.
- **Ethics:** College administration induce the ethical conducts to students during the entire stay of students in campus and by conducting induction program in the beginning of session and imparting code of conduct to students from time to time thus helping them to develop ethical values amongst the students.
- **Environment and Sustainability:** As per the supreme court guideline the undergraduate courses incorporate Environmental studies as a subject which imparts studies related to environmental issues and sustainability in which the students are given projects pertaining to the environmental concerns. It leads students to understand the issues of environmental contexts and sustainable development.
- **Effective Citizenship:** During the three-year UG programme, students actively participate in NCC, NSS, Red cross society activities. This participation helps them in developing effective citizenship, awareness of national issues and concerns and to be good citizens.
- **Self-directed and lifelong learning:** Students acquire various traits on completion of the course and program and develop the ability to learn by their own, consequently lifelong learning process is part of the personality.

DEPARTMENT OF ZOOLOGY

Course Outcome for B.Sc. – I

- The students will be able to understand classify and identify the diversity of animals.
- The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.
- State the outline of animal classification of non-chordates and chordates.
- Classify the higher invertebrate and vertebrates' groups.
- Categorize the diversity found in the invertebrates' groups of animals like Arthropoda, Mollusca and Echinodermata.
- Categorize the diversity found in the vertebrate groups of animals like reptiles, birds and mammals.
- Explain various adaptations in avian group as migration and flight in birds.
- The learner will understand the importance of cell as a structural and functional unit of life.
- The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates and extrapolates the life to the aspect of development. The cellular mechanisms and its functioning depend on endomembrane and structures. They are best are best studied with microscopy.

Course Outcome for B.Sc. I. Practical

- Gain knowledge to identify various animals based on the Demonstrate Major and minor Dissection of Earthworm, Cockroach, Palamon and pila.
- Prepare the model /drawing of Aquatic, terrestrial, aerial and desert animals.
- List the various invertebrate and vertebrate animals in a given class.
- Identify various larval stages and development in invertebrate and vertebrate groups.
- Study of prepare the Alternative methods: By Clay/Therma Col drawing/Model etc. of Adaptive characters of Aquatic, terrestrial, aerial and desert animals.
- Study of the representative museum specimen invertebrate and vertebrate.
- Study of prepared Slides Invertebrate, frog embryology, Chick embryology and cytology.
- Give knowledge Structure and function of Endocrine glands

Course Outcome for B.Sc. – II

- Explain the comparative anatomy of various organ Systems of vertebrates:
- Knowledge of basic terms in physiology.
- Students are taught the detailed concepts of digestion respiration excretion the functioning of nerves and muscles.
- Students gain fundamental knowledge of animal Physiology.
- Students Gain knowledge about the comparative physiological concepts of nutrition digestion respiration excretion metabolism and osmoregulation.
- Explain the structure of the contraction of muscle.
- Explain the concept of nutrition and digestion.
- Illustrate the anatomy and physiology of heart and cardiac cycle.
- Justify the location and structure of eye, ear and their functions.
- Explain the Theories and Evidences of organic evolution.
- Describe the Evolution of Horse.
- Gain knowledge of variation, Mutation, Isolation and Natural selection.
- Give Knowledge of the Prawn Culture, Sericulture, Apiculture, Pisciculture, Poultry keeping, Elements of Pest Control: Chemical & Biological Control
- Give Knowledge Structure and function of Endocrine glands, Hormone receptor, Biosynthesis and secretion of thyroid, adrenal, ovarian and testicular hormones, Endocrine disorder of pituitary, Thyroid, adrenal and pancreas.

Course Outcome for B.Sc. II Practical

- Study of the representative examples of the different chordates (Classified characters).
- Dissection of various systems of scolion-Afferent and Efferent branchial cranial nerves, internal ear.
- Study of prepare the Alternative methods: By Clay/Therma Col /drawing/Model etc.
- Simple microscopic technique through unstained or stained permanent mount.
- Study of prepared slides histological, as per theory papers.
- Study of limb girdles and vertebrae of frog, Varanus, Fowl and Rabbit.
- Identification of species and individual of honey bee.
- Life cycle of honey bee and silkworm.
- Exercise based on Evolution and Animal behaviour.

Course Outcome for B.Sc. – III

Paper-I - Ecology, Environmental Biology, Toxicology, Microbiology and Medical Micro Biology After successful completion the student would be able:

- To understand the basic theories and principles of ecology, ecosystems and their functioning to be aware of toxicants, their impacts on environment and remedial measures to understand the microbial world, its structure and function and to familiarize with the applied aspects of microbiology to make them aware of the pathogens, health related problems, their origin and treatment

Paper-II - Genetics, Cell-Physiology, Biochemistry, Biotechnology and Biotechniques After successful completion the student would be able:

- To get an in depth understanding of human genetics and genetic disorders
- To develop critical thinking, skill and research aptitude in the frontier areas of the biochemistry and biotechnology

To understand the basic Principal applications of analytical and separation techniques

