

Programme Educational Objectives (PEOs) for B.Sc. BZC & BtZC

Upon successful completion of the B.Sc. BZC & BtZC program, graduates will be able to:

Foundational Knowledge and Critical Thinking: Apply comprehensive knowledge of fundamental theories, concepts, and principles in Botany, Zoology, Chemistry and Biotechnology to critically analyze and solve problems in biological and chemical sciences.

Professional Competence and Skill Development: Demonstrate practical skills in laboratory techniques, experimentation, and scientific instrumentation relevant to the fields of life sciences and chemical sciences, fostering competency for diverse professional roles.

Higher Education and Research Aptitude: Pursue higher education, research, and advanced studies in Botany, Zoology, Chemistry, Biotechnology, Environmental Science, or allied interdisciplinary fields, contributing to scientific advancements.

Societal Impact and Ethical Responsibility: Understand the societal, environmental, and ethical implications of scientific advancements in their respective fields, promoting responsible practices and contributing to sustainable development and human well-being.

Communication and Lifelong Learning: Communicate scientific information effectively, both orally and in writing, and engage in continuous learning and professional development to adapt to evolving scientific and technological landscapes.

Entrepreneurial and Employability Skills: Acquire skills relevant for employability in various sectors, including research and development, pharmaceutical, agriculture, environmental consultancy, and food industries, or to explore entrepreneurial ventures in related areas.

The scope and potential: To recognize the scope and potential of animal science to address issues associated with environment and biodiversity conservation.

Program Objectives (PO's)

- The Biological Sciences undergraduate degree program aims to diversely train the students, enabling graduates to pursue career or advanced degrees in life, health sciences, research, education, industry, or governmental work.
- To master a broad set of biological and chemical knowledge concerning the fundamentals in these areas.
- To develop a plan for professional growth and development.
- Identify application and implementation of allied field of life science such as Biotechnology, Microbiology, Analytical techniques, Bioinformatics in Animal science.




S. Srinath
Narayana

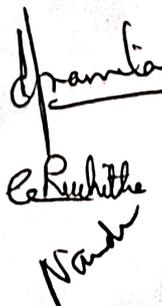

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Programme Outcomes: (PO's)

- PO 1: Ability to build a strong foundation of knowledge in different disciplines of their study.
- PO 2: Successfully perceive their career objectives in advanced education in professional in a scientific career in a government or industry.
- PO 3: Ability to collaborate with others from different disciplines in the recognition that multidisciplinary approaches are necessary to address the major issues facing society.
- PO 4: To develop an attitude for working effectively and efficiently in any competitive environment.
- PO 5: Professional growth and development in independent learning and creativity.
- PO 6: Ability to inculcate the Time Management, Work discipline and Skill in the students to strengthen their minds.
- PO 7: Participation in various activities to strengthen in Academic and also in other programmes.

Program Specific Outcome : (PSO's)

- PSO 1: Apply the broad knowledge of science across a range of field, in at least one area of study, while demonstrating and understanding the local and global contexts in which science is practiced.
- PSO 2: To apply the appropriate methods of research, investigation and design, to solve problems in science, Botany, Zoology, Chemistry, Biotechnology.
- PSO 3: To articulate the relationship between different science communities of practice, the international scope of science, and the contributions to their development that have been made by people with diverse perspectives, cultures and backgrounds;
- PSO 4: To evaluate the role of science, in current issues facing local and global communities.
- PSO 5: B.Sc graduates can opt to join a postgraduate level degree programme in their respective field or subject to pursue further studies.
- PSO 6: After completing B.Sc. degree one can get employed in different sectors in addition to scientific sectors, and seek out for career in Government corporations, banking and finance etc.
- PSO 7: Life Science Graduates can also find jobs in IT industry, Business, BPO, Marketing, Technical writing etc.



Pranita
Ruchita
Nand



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(Autonomous) NAAC Re-Accredited
Osmania University Campus, Hyderabad – 500007
B.Sc (BZC & BtZC)-I Year
Zoology
Semester-I Paper – I
Animal Diversity – INVERTEBRATES & VERTEBRATES

Course Objectives

- To identify and recall major invertebrate and vertebrate phyla and their classifications.
- To describe the anatomical, physiological, and developmental features of key animal groups.
- To analyze the ecological and economic roles of selected animal taxa in natural systems.
- To evaluate evolutionary transitions (e.g., aquatic to terrestrial life, jawless to jawed).

Course Outcomes

- Students will be able to classify and differentiate animal groups based on structural and functional features.
- Students will explain the evolutionary significance of features like coelom, notochord, segmentation, etc.
- Students will illustrate and apply the functioning of systems like the canal system and water vascular system
- Students will analyze and evaluate the ecological and economic importance of insects, molluscs, and other taxa.


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Semester-II Paper – II

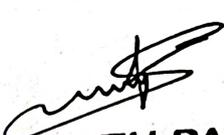
COMPARATIVE ANATOMY OF VERTEBRATES AND DEVELOPMENTAL BIOLOGY

Course Objectives

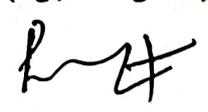
- To describe and compare the structural organization and functional adaptations of organ systems in vertebrates.
- To analyze the evolutionary trends in vertebrate body systems, including integumentary, skeletal, muscular, and nervous systems.
- To evaluate physiological adaptations in digestion, respiration, circulation, and excretion across vertebrate taxa.
- To illustrate key stages of vertebrate embryonic development and explain mechanisms underlying organogenesis.
- To integrate knowledge of developmental biology with evolutionary theory, particularly through Evo-Devo concepts.

Course outcomes

- Students will be able to compare and differentiate integumentary, skeletal, and muscular structures from fishes to mammals.
- Students will explain functional and evolutionary adaptations in vertebrate respiratory, circulatory, and excretory systems.
- Students will analyze reproductive and nervous system variations and their significance across vertebrate taxa.
- Students will illustrate and describe vertebrate embryonic development from gametogenesis to organogenesis.
- Students will evaluate and apply Evo-Devo principles (e.g., Hox genes) to explain vertebrate body plan evolution


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