Payyanur College, Payyanur
(Affiliated to Kannur University)

Programme Outcomes (POs)

BSc DEGREE PROGRAMME (FOR SCIENCE)

PROGRAMME OUTCOMES (PO)

PO1. Critical Thinking:

1.1. Acquire the ability to apply the basic tenets of logic and science to thoughts, actions and interventions.
1.2. Develop the ability to chart out a progressive direction for actions and interventions by learning to recognize the presence of hegemonic ideology within certain dominant notions.
1.3. Develop self-critical abilities and also the ability to view positions, problems and social issues from plural perspectives.

PO2. Effective Citizenship:

2.1. Learn to participate in nation building by adhering to the principles of sovereignty of the nation, socialism, secularism, democracy and the values that guide a republic.
2.2. Develop and practice gender sensitive attitudes, environmental awareness, empathetic social awareness about various kinds of marginalization and the ability to understand and resist various kinds of discriminations.
2.3. Internalize certain highlights of the nation and region history. Especially of the freedom movement, the renaissance within native societies and the project of modernization of the post-colonial society.

PO3. Effective Communication:

3.1. Acquire the ability to speak, write, read and listen clearly in person and through electronic media in both English and in one Modern Indian Language
3.2. Learn to articulate, analyze, synthesize, and evaluate ideas and situations in a well-informed manner.
3.3. Generate hypotheses and articulate assent or dissent by employing both reason and creative thinking.

PO4. Interdisciplinarity:

4.1. Perceive knowledge as an organic, comprehensive, interrelated and integrated faculty of the human mind.
4.2. Understand the issues of environmental contexts and sustainable development as a basic interdisciplinary concern of all disciplines.
4.3. Develop aesthetic, social, humanistic and artistic sensibilities for problem solving and evolving a comprehensive perspective.

Programme Specific Outcomes (PSOs)

Name of the Programme: **BSc ZOOLOGY**

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1.

Skill development for the proper identification, naming and classification of life forms especially animals.

PSO2.

Acquisition of knowledge on structure, life cycle and life processes that exist among animal diversity through certain model organism studies.

PSO3.

Understanding of various interactions that exist among plants animals and microbes; to develop the curiosity and love on the dynamicity of nature.

PSO4.

Understanding of the major elements of variation that exist in the living world through comparative morphological and anatomical study.

PSO5.

Ability to explain the diversity and evolution based on the empirical evidences in Morphology, Anatomy, Embryology, Physiology, Biochemistry, Molecular Biology and Life history.

PSO6.

Skill development in the observation and study of nature, biological techniques and scientific investigation

PSO7.

Making aware of the scientific and technological advancements in the fields of Information and Communication, Biotechnology and Molecular Biology for further learning and research.

PSO8.

Internalization of the concept of conservation and evolution through the channel of spirit of inquiry.

Course Outcomes (COs)

Name of the Programme: **BSc ZOOLOGY**

COURSE OUTCOMES (COs)

Sl. No	Name of the Course	Outcomes
1.	**1B01ZLG PROTISTA AND NONCHORDATA - I**	**CO1:** To understand the basic methods in zoology and animal classification. **CO2:** Able to appreciate the process of evolution (unicellular cells to complex, multicellular organisms). **CO3:** Familiar with the protist and non-chordate world (from Phylum Porifera to Mesozoa) that surrounds us. **CO4:** Able to identify the invertebrates (from Phylum Porifera to Mesozoa) and classify them up to the class level with the basis of systematics. **CO5:** Understand the basis of life processes in the non-chordates (from Phylum Porifera to Mesozoa) and recognize the economically important invertebrate fauna.
2.	**2B02ZLG NON - CHORDATA - 2**	**CO1:** Familiar with the non-chordate world (Coelomates - from Phylum Annelida to Hemichordata) that surrounds us. **CO2:** Able to identify the invertebrates (Coelomates - from Phylum Annelida to Hemichordata) and classify them up to the class level with the basis of systematics. **CO3:** Understand the basis of life processes in the non-chordates (from Coelomates – from Phylum Annelida to Hemichordata) and recognize the economically important invertebrate fauna.
3.	**3B03ZLG CHORDATA – I**	**CO1:** Understand the origin and evolutionary relationship in different subphyla of chordates. **CO2:** To understand the diversity of chordates (from urochordates to reptiles). **CO3:** Understand the unique characters of urochordates, cephalochordates and vertebrates. **CO4:** Recognize life functions of chordates (from urochordates to reptiles).
4.	**4B04ZLG CHORDATA – II AND COMPARATIVE ANATOMY**	**CO1:** Understand the general and unique characteristics and classification of Aves and Mammals.

		CO2: Understand the diversity and relation in form and structure of chordates.
5.	**5B05ZLG EVOLUTION, ETHOLOGY AND RESEARCH METHODOLOGY**	**CO1:** Realize that the whole living system has a common ancestry and so all are related. **CO2:** Realize the fundamental characteristics of science as a human enterprise. **CO3:** Apply scientific methods in day-to-day life. **CO4:** Able to design a research work on a topic.
6.	**5B06ZLG ANIMAL PHYSIOLOGY**	**CO1:** Understand the function of various systems at cellular and system levels. **CO2:** Understand the mechanisms that work to keep the body alive and functioning. **CO3:** Apply the knowledge to lead a healthy life.
7.	**5B07ZLG BIOCHEMISTRY AND BIOPHYSICS**	**CO1:** Understand the importance of Bio molecules. **CO2:** Familiar with various biochemical pathways. **CO3:** Develop knowledge about equipment like microscopes, spectrophotometers, centrifuges etc.
8.	**5B08ZLG GENETICS**	**CO1:** Comprehensive and detailed understanding of the chemical basis of heredity. **CO2:** Understanding about the role of genetics in evolution. **CO3:** The ability to evaluate conclusions that are based on genetic data. **CO4:** The ability to understand results of genetic experimentation in animals.
9.	**6B09ZLG CELL BIOLOGY, IMMUNOLOGY AND MICROBIOLOGY**	**CO1:** Structural and functional aspects of basic unit of life i.e. cell concepts. **CO2:** Gather basic concepts of Cell Biology along with various cellular functions. **CO3:** Understand the basic concepts of immunity. **CO4:** Understand the diversity of microbes and their use and harm.
10.	**6B10ZLG, MOLECULAR BIOLOGY & BIOINFORMATICS**	**CO1:** Understand the importance of Bio molecules. **CO2:** Familiar with various tools and applications of Bioinformatics.
11.	**6B11ZLG, ENVIRONMENTAL SCIENCE**	**CO1:** Able to describe the relation between abiotic and biotic factors. **CO2:** Students are able to describe various biological interactions.

		CO3: Students are able to understand how change in population affect the ecosystem.
12.	**6B12ZLG, DEVELOPMENTAL BIOLOGY**	**CO1:** Understand the major steps in embryological development. **CO2:** Understand the intricate mechanisms involved in the development of animals.
COMPLEMENTARY COURSES		
13.	**1C01ZLG DIVERSITY OF LIFE I, PROTISTANS & NON-CHORDATES**	**CO1:** Familiar with the non-chordate world that surrounds us. **CO2:** Able to identify the invertebrates and classify them up to the class level with the basis of systematics. **CO3:** Understand the basis of life processes in the non-chordates and recognize the economically important invertebrate fauna.
14.	**2C02ZLG DIVERSITY OF LIFE – II, CHORDATE FORM AND FUNCTION**	**CO1:** Understand the origin and evolutionary relationship in different subphyla of chordates. **CO2:** Understand the diversity of chordates. **CO3:** Understand the unique characters of urochordates, cephalochordates and vertebrates. **CO4:** Recognize life functions of chordates.
15.	**3CO3ZLG ANIMAL PHYSIOLOGY**	**CO1:** Understand the function of various systems at cellular and system levels. **CO2:** Understand the mechanisms that work to keep the body alive and functioning. **CO3:** Apply the knowledge to lead a healthy life.
16.	**4C04ZLG, MEDICAL ZOOLOGY**	**CO1:** Understanding of the various causative organisms and factors and also how and what preventive measures can be adopted against these.
GENERIC ELECTIVE COURSES		
17.	**5D02ZLG APICULTURE**	**CO1:** Develop self-employment capabilities. **CO2:** Acquires scientific knowledge of profitable farming.
18.	**5D03ZLG SERICULTURE**	**CO1:** Develop self-employment capabilities. **CO2:** Acquires scientific knowledge of sericulture.