Department of Zoology & Fisheries

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PSOs

Department Name: **Zoology& Fisheries; B.Sc. BZC (Botany, Zoology, Chemistry)**

PO's:

- The program has been introduced to prepare the students for a bright career which finds application and provides solution to some of the major contemporary problems on the globe i.e., providing food for growing population, designing advanced medical treatment options for increasing evolving diseases, to find solutions for wild life conservation and to deteriorating environment caused due to over exploitation /misuse of natural resources etc.,
- In this program the study of Biology offers around the world where there are Biologists making a difference to our lives – ensuring our food is safe, treating and preventing disease, developing green technologies or tracking the role of Organisms in climate change.
- In this program the knowledge about the subject chemistry comes in to play when structures of macromolecules and their interactive relations to the environment are to be understood.
- Finally the subject Biology amalgamates with various disciplines of sciences and offers ethically acceptable knowledge to bring about sustainable solutions for a variety of problems related to Ecology, Evolution, Agriculture, Environment and Quality of human life. These problems are solved with responsibility using appropriate tools while keeping in mind safety factor of environment and Society.

PSO's:

- **PSO 1:** Understand The program Botany, Zoology and chemistry has been introduced to prepare the students for a career which finds application and provides solution to some of the major contemporary problems on the globe i.e., providing food for growing population, designing advanced medical treatment options for increasing evolving diseases, to find solution to deteriorating environment caused due to over exploitation / misuse of natural resources etc.

- **PSO 2:** In this program the study of Biology offers around the world there are biologists making a difference to our lives – ensuring our food is safe, treating and preventing diseases, developing green technologies or tracking the role of organisms in climate change.

- **PSO 3:** In this program the knowledge about the subject chemistry come in to play when Structures of macromolecules and their interactive relations to the environment are to be understood.

Finally the subject biology amalgamates the various disciplines of sciences and offers Ethically acceptable knowledge to bring about sustainable solutions for a variety of problems related to Ecology, Evolution, Agriculture, Environment and Quality of human life. These Problems are solved with sole responsibility of using appropriate tools while keeping in mind Safety factor of Environment and society.

CO's:

Corse Code	Course Name	Nature of the Course- Local/ National/ Regional/ Global/ developmental needs (write the correct option)	Course outcomes (list of course outcomes using bullets)
VII -6144	Immunology	Local & Regional. Few chances for National and Global	➢ To learn about the basic mechanisms, distinctions and functional interplay of innate and adaptive immunity and the cellular/molecular pathways of humoral/cell-mediated adaptive responses. ➢ To learn about the structure, classes, types of Antibody and Antigens and factors affecting antigen city. ➢ To understand how disease causing microorganism can be used as a weapon to fight against the same microorganism. ➢ To get better understanding about vaccination, blood transfusion, grafting etc. ➢ To gain knowledge that helps to take up research to find medicines for present incurable diseases.
III - 3107	Cytology, genetics & evolution	Local & Regional. Few chances for National and Global	➢ To study about macro molecules responsible for life on earth. ➢ To acquire knowledge on organelle genome organization and various gene families. ➢ To know the level of expression by transcription and translation. ➢ To learn the molecular mechanisms responsible for diseases and may take up research in this field. ➢ To learn about contributions of various scientists in the field of Biology and the microscopy, various staining methods useful for the study of micro organisms in detail. To be motivated to pursue research through keen observations.

			➢ To study in detail about Microorganisms like bacteria and viruses - their structure, life cycle, history, classification and their importance. To apply the knowledge about microorganisms in daily life like maintaining hygiene, and taking food rich in proboitics for healthy life. ➢ To study the food habits of diverse microorganisms under the name microbial nutrition. To acquire the ability to decide which nutrition should be supplied to a particular microorganism for its growth and to apply this knowledge for carrying out project. ➢ To know about the favorable and unfavorable conditions, growth properties, mechanisms to control growth of microbes. To use this knowledge in controlling harmful microorganisms and thus avoiding occurrence of infectious diseases. ➢ To study the detailed structure and the sub cellular structures, various mechanisms occurring in the eukaryotic cell, which helps in designing drugs in case there is abnormal cell division etc.
IV - 4107	Animal physiology, ecology & zoo geography	Local & Regional. Few chances for National and Global	➢ To know about the discovery, structure and properties, stabilizing forces of various kinds of DNA. The understanding of the basic molecule of life like DNA for inspiring research in various fields and specifically in life science for gene therapy, designing drugs etc. ➢ To know about the structures, classification physic -chemical properties of the building blocks of proteins i.e., amino acids. To learn about the mechanism of diseases resulting due to abnormal protein structures. ➢ To learn about the classification, structure, nomenclature and importance of a major nutrient that is carbohydrate. To learn about the polysaccharides present in nature and various conditions arising due to lack of improper intake of carbohydrates. ➢ To learn about the structure, classification, nomenclature, inhibition, kinetics of the enzymes the knowledge of which is useful for

			application in medical field to cure diseases arising due to non functional or absence of enzymes. ➢ To study regulation, inhibition, Bypass reactions of various pathways taking place in living cells in detail as any abnormalities or diseases arising due to deregulation of the pathways is easily understood and solution can be provided through research. ➢ To acquire knowledge on the principle, basic concepts, instrumentation, applications, types of spectro photometry are studied and this knowledge is applied for estimation of bio molecules like DNA, Proteins, Colored solutions etc.
V - 5135	Animal biotechnology	Local & Regional. Few chances for National and Global	➢ To learn about the principle, mechanism, equipment and applications of separation of Bio molecules, pigments etc., is learnt. ➢ To be able to design and carry out appropriate PCR based DNA detection assays and to apply gel electrophoresis in DNA detection and quantification, Evaluate appropriate methods for mutation detection, Use Bio informatics tools for DNA sequence analysis. ➢ To learn about Isotopic tracer techniques - how to calculate the Measurement of radioactivity, different principle, advantages, disadvantages instrumentation techniques of counters, mass Spectroscopy and they can learn how to apply different isotopes in biotechnology. ➢ To learn the basic principles, concept and types of centrifuges to isolate cell components and determine molecular weight by sedimentation velocity and sedimentation equilibrium methods. ➢ To learn the basic concepts of mean, median, mode and standard deviation and standard error, Enova using to calculate problems,

1.3.1:

Course Code	Course Title	Issue addressed – Human values, Professional Ethics, Gender, Environment and sustainability (write the correct option from the list)	Focus of the course (what the student learns)
I - 1107	➢ Bacteria, fungi & Virus	Human consumption and productive values for sustainability	Importance of biodiversity
I - 1107	➢ Coelenterates, Poriferns and Arthropods & Molluscans,	Human Ornamental values	Human culture
I - 1107	➢ Insects , Amphibians& snakes	Environmental equilibrium	To maintain healthy Environment
VII - 6144	➢ Human karyo typing & Sex determination	Gender	Human Genetics
VII - 6144	➢ Blood grouping	Human values& Ethics	Human Ethics to save life
I - 1107	➢ Snake venom (snake poison for the preparation of Anti venom	Environment and Sustainability	Human Immunity
VIII-B - 6146	➢ Fish& Shrimp population enhancement	Environmental equilibrium and Sustainability	National economy development
V - 5135	➢ DNA finger printing	Gender	CBI (Research & Investigation to identify criminals and

			legal justice)
V - 5135	➢ Western Blot test& Elisha test	Human values	To identify HIV and save the AIDS patients
V - 5135	➢ In-vitro fertilization & Embryo transfer	Human Ethics	Importance of biotechnology for Population sustainability
V - 5135	➢ Hybridization techniques	Environment and Sustainability	Values of Genetics
V - 5135	➢ Chicks (Growers& Layers)	Environment and Sustainability	Poultry farming
V - 5135	➢ Deworming & Vaccination	Health Environment and sustainability	Human immunology
V - 5135	➢ Dairy Technology	Healthy Environment	To enhance nations economy& animal husbandry
VIII-C - 6147	➢ Post harvest technology	Environmental equilibrium	To preservation fish methods