A.D.M. COLLEGE FOR WOMEN
(Autonomous)
Affiliated to Bharathidasan University
(Nationally Accredited with "A" Grade by NAAC – 3rd Cycle)
NAGAPATTINAM 611 001.

LOCAL/NATIONAL/REGIONAL/GLOBAL RELEVANCE

PG DEPARTMENT OF ZOOLOGY

Programme: B.Sc Zoology **Year: 2021-2022**

Course Code	Title of the Course	Local/Regional/ National /Global	Rationale	Course Outcomes	PSOs Addressed	Cognitive Level
ZUA	Biology of Invertebrates	National & Regional	Understand the systematic and functional morphology of various groups of invertebrates.	• CO 1: Describe the distinguishing characteristics of the major taxa. Explain the basic aspects of classification details of invertebrates. Understand biodiversity, habitat, adaptation, organization and taxonomic status of invertebrates.	PSO-1,2,3,4,5	Un, Re, An, Ap, Ev

				• CO 2: Recall certain morphological attributes and physiological processes that are distinct and significant to each Phyla	PSO-1,2,3,4,5	Un, Ac, Ap, Ev, Cr
				• CO 3: Understand the systemic and functional morphology of various groups of invertebrate Explain the basic aspect of structural and functional details of Invertebrates.	PSO- 2,3	Re, An
				• CO 4: To compare and understand the general and specific characteristics within each Phyla.	PSO-1,4	Re, An

				• CO 5: Interpret the affinities, evolutionary relationships and adaptation of the major taxa and to explain their economic importance with respect to Non Chordates.	PSO1,2,3,4,5	Re, Ap, An, Ev, Cr
ZUB	Biology of Chordates	National & Regional	Study the salient features, affinities and adaptations of chordates.	• CO 1: Identify the general and specific characteristics of the different classes and the organization of the representative types.	PSO- 1, 2, 3	Ac, Un, An
				• CO 2: Recognize and describe the major groups of chordates.	PSO-1, 2	Ac, Un

				• CO 3: Understand the diversity of Chordates and its outline systematic. Discuss their affinities and adaptations to different modes of life	PSO-1, 2 , 3	Ac, Un, An
				• CO 4: Understand the unique features, taxonomy and functional morphology of different classes of chordates.	PSO-1, 2, 3, 5	Ac, Un, An, Cr
				• CO 5: To infer the affinities, evolutionary relationships and adaptation of the major taxa and to explain their economic importance with respect to Chordates	PSO-1, 2, 5	Ac, Un, Cr

ZUD	Cell and Molecular Biology	National & Regional	Know the cell structure at molecular level in prokaryote and Eukaryote	• CO 1:To impart knowledge about the prokaryotic and eukaryotic cell, biosynthesis of cellular membranes and organelles and the unified role it plays for the ultimate sustainability of the organisms.	PSO-1, 2, 3,4	Ac, Un, An, Ap
				• CO 2: Rigorous foundation in the principles of molecular and cellular biology give insights into the mechanisms involved in the synthesis and function of macro molecules such as DNA, RNA, and proteins.	PSO-1, 2, 3,4	Ac, Un, An, Ap

				CO 3: Ability to make connections between the molecular mechanisms, holistic understanding of biological organization and function from the molecules to cells, tissues, organs and entire organism.	PSO-1, 2, 3,	Re, Un, Ap
				• CO 4: Studying Cells at molecular level trains the students to think logically, critically and quantitatively.	PSO-1, 2,4	Ac, Un, An,
				• CO 5: Learn to interpret statements made in the scientific literature, as well as in non-science areas, based on evidence, not anecdote.	PSO- 5	Cr

ZUE	Developmental Biology	National & Regional	Understand the factors involving in regulation of development process. Understand the role of immunity in human.	• CO 1: Develop critical understanding how a single-celled fertilized egg becomes an embryo and then a fully formed adult.	PSO-1,2	Ac, Un
				• CO 2: Understand how development affects organization of phenotypes and their variation.	PSO-1,2, 3, 4	Ac, Un, Ap, An,
				• CO 3: Aware of the reproductive cycle, hormones, Birth control and critically assess relevant scientific literature in reproductive biology and present their argument in oral and written work.	PSO- 1,2,3, 4,5	Ac, Re, Un, Ap, Cr

				• CO 4: Explain the concept of Immunology, Mechanism of immunity, Immunity regulating cells.	PSO-1, 2, 4	Ac, Un, An
				• CO 5: Understand the Basic structure, classes and function of Antibodies, Antigen-Antibody interaction..	PSO-1, 2	Ac, Un,
UZG	Genetics and Microbiology	National & Regional	Understand the basics of Genetics and importance of sex determination and genetic disorders.	• CO 1: Able to explain the role of the mendelian's inheritance and multiple alleles in day to day life activities.	PSO-1,2	Ac, Un,
				• CO 2: Understand the cause and effect of alterations in chromosome number in sex determination	PSO-1,2,3	Ac, Un, Ap

				• CO 3: Understanding the applications of genetics for the welfare of health and treatment of disease, and the impact of selective advantage and natural selection on human genetic disorders.	PSO-1,2	Ac, Un
				• CO 4: Acquired technical skills will help the students for collecting and processing biological specimens for analysis.	PSO-1, 2,3	Re, Un, Ap
				• CO 5: Students enable their critical and analytical thinking in the detection of diseases and to distinguish normal and abnormal microscopic pathogens.	PSO-1,2,3	Re, Un, Ap,

UZH	Environmental Biology, Biodiversity conservation and Evolution	National & Regional	Study the physical, chemical and biological parameters and their impact on environment.	• CO1:Understand the basic concept of Ecosystem and the factors.	PSO-1,2	Ac, Un
				• CO2:Know the populatio and community ecology.	PSO-1,2	Ac, Un,
				• CO 3: Aware of sources of pollution, ecological effect and control measures.	PSO-1,2,4	Re, Un, An
				• CO 4: Understand types, values and conservation of biodiversity.	PSO- 1, 2	Ac, Un,
				• CO 5: Compare and contrast the various theories on formation of new species and identify the factors that play a role in the process of evolution and understand the genetic basis of evolutionary change	PSO-2, 3	Un, Ap

UZI	Biotechnology	National & Regional	Understand the importance and application of Biotechnology in various field	• CO 1: To impart comprehensive understanding of the principles and practices of biotechnology	PSO-1, 2	Ac, Un
				• CO 2: Application of genetic engineering in prevention and diagnosis of diseases and discuss the different applications of biotechnology.	PSO-2, 3	Un, Ap
				• CO 3: Understanding the principles and practices of biotechnology give insights into the fermentation technology.	PSO-2, 3	Un, Ap

				• CO 4: Understanding the application of genetic engineering in agriculture for production of bio fertilizer.	PSO-2, 3	Un, Ap
				• CO 5: Know the application of biotechnology in the field of enzyme technology.	PSO-1,4	Re, An
UZJ	Animal physiology	National & Regional	Study the structure and physiology of different organs in animal and human body	• CO 1: Know the role of nutrition in human and its source, types and importance. To understand the mechanism of human respiration.	PSO-1, 2	Ac, Un

				• CO 2: To understand the blood circulation and excretion of human.	PSO-1,2,	Ac, Un
				• CO 3: Recognize the complimentary relationship of structure and function of nerves and describe the interactions between different organ systems to maintain homeostasis	PSO-3	Ap
				• CO 4: Able to explain the receptors and biological rhythms in response to internal and external environmental changes.	PSO- 1,4	Re, An

				• CO 5: Know the role of hormones in reproduction of mammals.	PSO-1,2,4	Ac, Un, An
UZK	Biophysics, Biochemistry and Biostatistics	National & Regional	Study basic concept of biophysics, Biochemistry and Biostatistics to analyze the biological data	• CO 1: Develop a thorough grounding in fundamental analytical approaches for quantitative study of living systems and life processes.	PSO-1,2	Ac, Un
				• CO 2: To determine the physical phenomena which influence living organisms and some of their basic applications in science and society.	PSO-2, 3, 4	Un, Ap, An

				• CO3: Understand the structure and function of macromolecules	PSO-2, 3	Un, Ap
				• CO4: Identify the metabolic pathways of macromolecules.	PSO-2	Un
				• CO 5: Know to analyze the biological data and document preparation.	PSO-1, 3, 4	Re, Ap, Ev

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Programme: M.Sc, Zoology **Year:2021-2022**

Course Code	Title of the Course	Local/Regional/ National /Global	Rationale	Course Outcomes	PSOs Addressed	Cognitive Level
PZA	Animal Phylogeny and Biodiversity	National & Regional	To provide thorough understanding in the morphology, mode of life of Invertebrates and vertebrate animals.	• CO 1: Understand and study of the Origin and phylogeny of Invertebrates and Chordates	PSO-2	Un
				• CO 2: Understand the organization, Homology and	PSO-2	Un

				Analogy, Diversity of Invertebrate and chordates.		
				• CO3: Job offering: Nature conservation officer in Forest Department.	PSO-2,5	Un, Cr
				• CO4: Zoo keeper in Museum, Sanctuaries.	PSO-2,5	Un, Cr
				• CO5: Research Scientist in ICFRE Institutes, Van Vigyan Kendra, SACON.	PSO-2, 5	Un, Cr
PZB	Cell and Molecular Biology	National & Regional	To know the structure and importance of genetic material and gene expression and regulation of prokaryotes and eukaryotes	• CO 1: Understand the cell structure in molecular level.	PSO-1,2	Re, Un
				• CO2: Understand basic idea of cell cycle and regulation to apply in research.	PSO-1,2,3	Ac, Un, Ap
				• CO3: Job offers:	PSO-2,5	Un, Cr

				Research Scientist in Cancer Research center, Adayar.		
				• CO4: Research Scientist in Tata Memorial Centre for Advanved Treatment in Cancer, Parel Mumbai.	PSO-2,5	Un, Cr
				• CO5: Technical officer in Centre for cellular and Molecular Biology(CCMB), TIFR at Hyderabad.	PSO-2,5	Un, Cr
PZC	Genetics	National, regional, Local & Global	Provide an opportunity to learn the importance of inheritance in Man	• CO 1: Student will test and deepen their mastery of genetics by applying this knowledge in a variety of problem solving situations.	PSO-1, 4	Ac, An

				• CO 2: Student learn the basic principles if inheritance at molecular level.	PSO-1,2	Ac, Un
				• CO3: Job offer: Technician in Karyotyping in Medical Research Centre.	PSO-2,5	Un, Cr
				• CO 4: Research scientist in ICMR institutes	PSO-2, 3,5	Un, An, Cr
				• CO 5: Research Assistant in Institute of Forest Genetics and Tree Breeding, Coimbatore.	PSO-2,3,4	U, Ap, Ev
PZD	Microbiology and Immunology	National, regional, Local & Global	To familiarize the learner with the applied aspects of microbiology and	• CO 1: Understand an overview of the microbial world, its structure and function.	PSO-1	Re

			know the immunodeficiency diseases and its diagnostic techniques	• CO 2: Students have intensive and in-depth learning in culture techniques and familiarize the learner with the applied aspects of microbiology.	PSO-1,2	Ac, Un
				• CO 3: Student will be able to identify the cellular and molecular basis of immune responsiveness.	PSO-4	Ev
				• CO 4: Learners understand immunology is the branch of biomedical.	PSO-2	Un
				• CO 5: Job offer: Epidemiologist, Pathology Assistant, Teacher, Veterinarian	PSO-3,5	Ap, Cr

				Associate, Medical and clinical Laboratory Technologists.		
PZF	Developmental Biology	National, regional, Local & Global	To expose the learner to the new developments in embryology and its relevance to Man	• CO 1: Understand the concepts and process in developmental biology.	PSO-2	Un
				• CO 2: Understand the genetic mechanisms and the unfolding of the same during development.	PSO-2	Un
				• CO 3: Expose the learner to the new developments in embryology and its relevance to Man.	PSO-2, 4	Un,Ev
				• CO 4: Understand egg cleavage and the mechanism of embryogenesis, organ development	PSO-1,2	Ac, Un

				• CO 5: Job offer: IVF laboratory, Embryologists in O&G department in Medical College and Research Centre, Research Assistant in Veterinari College and Research centre. Animal care taker.	PSO-2,5	Un, Cr
PZG	Biochemistry, Biophysics and Bio techniques	National, regional, Local & Global	To expose the learner to the new developments in embryology and its relevance to Man	• CO 1: Understand the chemical nature of life and life process	PSO-1	Ac
				• CO 2: Understand the structure of bio-molecules and its function in life	PSO-1, 2	Ac, Un
				• CO 3: Learn the biophysical properties and functioning of life processes	PSO-1, 2	Ac, Un

				• CO 4: Learn the advanced tools and techniques available for studying biochemical and biophysical nature of life	PSO-2, 3, 4	Un, Ap, Ev
				• CO 5: Job offer: Instrumentation and Lab technician, Research Assistant in Clinical Laboratory, Technician/Research Assistant in TIFR, CCMB, ICFRE, ICMRE, ICAR, AIMS Research Institute. Institute	PSO-5	Cr
PZH	Applied Biotechnology	National, regional, Local & Global	To familiarize the students with public policy, bio safety, and intellectual property rights issues to understand the modern biotechnology practices.	• CO 1: Understand advance technique and its application in the field of biotechnology	PSO-2	Un
				• CO 2: Understand the modern	PSO-2, 3	Un, Ap

				biotechnology practices and approaches with an emphasis in technology application, medical, industrial, environmental and agricultural areas		
				• CO 3: Familiarize the students with public policy, biosafety, and intellectual property rights issues	PSO-1,4	Re, Ev
				• CO4:Skill in the advanced technology	PSO-4	An
				• CO 5: Job offer: BCG vaccine Laboratory Chennai. Pasteur Institute Ooty, Clinical laboratory, Medical	PSO-5	Cr

				Research Centre, IVF laboratory, Research Assistant/ JRF/SRF/ in the Research Institute of ICAR, ICMRE, VCRC, TIFR, CCMB, Fisheries University and Research centre		
PZJ	Animal Physiology	National, regional, Local & Global	To understand the basics in physiology in different organs of animal and human body.	• CO 1: Have enhanced knowledge of mammalian physiology	PSO-1,2	Ac, Un
				• CO 2: Understand the function of physiological systems such as respiratory, circulatory and metabolic system.	PSO- 1,2	Ac, Un
				• CO 3: Understand the physiological response to that environment	PSO-2	Un

				• CO 4: Able to analyze and report on experiments in zphysiology.	PSO- 4	An
				• CO 5: Understand the endocrine organs structure and functions	PSO-2	Un
PZK	Bioinformatics and Computer Applications in Biology	National, regional, Local & Global	To know the Bioinformatics tools in biological data and data analysis & comparison during research studies	• CO 1: Understand the Biological databases and its scope.	PSO-2	Un
				• CO 2: Learn sequence alignment to construct phylogenetic tree using of bio informatics tools	PSO-2,3	Un, Ap
				• CO 3: Skill to predict protein structure using RASMol package	PSO-3,4	Ap, An

				• CO 4: Understand the concept of computer programming which make it necessary to integrate informatics when solving biological problems	PSO-2,4	Un, An
				• CO 5: Understand it has become an important focus for industry, particularly in the post-genomic era.	PSO-2, 3	Un, Ap
PZM	Environmental Biology and Evolution	National, regional, Local & Global	Learn the advanced technique of remote sensing , satellite image analysis and evolutionary process at the molecular level.	• CO 1: Understand the Biological databases and its scope.	PSO-2	Un
				• CO 2: Learn sequence alignment to construct phylogenetic tree using of bio informatics tools	PSO-2,3	Un, Ap

				• CO 3: Skill to predict protein structure using RAS Mol package	PSO-3,4	Ap, An
				• CO 4: Understand the concept of computer programming which make it necessary to integrate informatics when solving biological problems	PSO-2,4	Un, An