

A.S. D GOVT.DEGREE COLLEGE FOR WOMEN (A), KAKINADA

DEPARTMENT OF ZOOLOGY & AQUACULTURE TECHNOLOGY

2022-2023

ZOOLOGY Courses offered

Sem	Course Name	Course type (T/L/P)	
I	Animal Diversity – I Biology of Non- Chordates	T	
	Animal Diversity – I Biology of Non- Chordates Lab	L	
II	Animal Diversity –II Biology of Chordates	T	
	Animal Diversity –II Biology of Chordates Lab	L	
III	Cell Biology, Genetics, Molecular Biology & Evolution	T	
	Cell Biology, Genetics, Molecular Biology & Evolution Lab	L	
IV	Physiology, Cellular Metabolism & Embryology	T	
	Physiology, Cellular Metabolism & Embryology Lab	L	
	Immunology & Animal Biotechnology	T	
	Immunology & Animal Biotechnology Lab	L	
V	Sustainable Aquaculture Management	T	
	Sustainable Aquaculture Management Lab	L	
	Post- Harvest Technology of Fish and Fisheries	T	
	Postharvest Technology of Fish and Fisheries Lab	L	
	Live Stock Management-I (Biology of Dairy Animals)	T	
	Live Stock Management-I (Biology of Dairy Animals) Lab	L	
	Live Stock Management -II (Dairy Production and Management)	T	
	Live Stock Management -II (Dairy Production and Management) Lab	L	

COURSE OUTCOMES

SEMESTER-I

Animal Diversity – Biology of Non chordates

Course Outcomes: By the completion of the course the graduate should able to –

CO1: Describe general taxonomic rules on animal classification

CO2: Classify Protozoa to Coelenterata with taxonomic keys

CO3: Classify Phylum Platyhelminthes to Annelida phylum using examples from parasitic adaptation and vermin composting

CO4: Describe Phylum Arthropoda to Mollusca using examples and importance of insects and Molluscans

CO5: Describe Echinodermata to Hemichordate with suitable examples and larval stages in relation to the phylogeny

SEMESTER-II

Animal Diversity – Biology of Chordates

Course Outcomes: By the completion of the course the graduate should able to –

CO1: Describe general taxonomic rules on animal classification of chordates

CO2: Classify Protochordata to Mammalian with taxonomic keys

CO3: Understand Mammals with specific structural adaptations

CO4: Understand the significance of dentition and evolutionary significance

CO5: Understand the origin and evolutionary relationship of different phyla from Prochordata to mammalian.

SEMESTER-III

Cell Biology, Genetics, Molecular Biology and Evolution

Course Outcomes: The overall course outcome is that the student shall develop deeper understanding of what life is and how it functions at cellular level. This course will provide students with a deep knowledge in Cell Biology, genetics, Molecular biology and Evolution and by the completion of the course the graduate shall able to–

CO1: To understand the basic unit of the living organisms and to differentiate the organisms

by their cell structure.

CO2: Describe fine structure and function of plasma membrane and different cell organelles of eukaryotic cell.

CO3: To understand the history of origin of branch of genetics, gain knowledge on heredity, interaction of genes, various types of inheritance patterns existing in animals

CO4: Acquiring in-depth knowledge on various aspects of genetics involved in sex determination, human karyo typing and mutations of chromosomes resulting in various disorder.

CO5: Understand the central dogma of molecular biology and flow of genetic information from DNA to proteins.

CO6: Understand the principles and forces of evolution of life on earth, the process of evolution of new species and apply the same to develop new and advanced varieties of animals for the benefit of the society.

SEMESTER-IV (paper-IV)

Animal Physiology, Cellular Metabolism and Embryology

Course Outcomes: This course will provide students with a deep knowledge in Physiology, Cellular metabolism and Embryology and by the completion of the course the graduate shall able to –

CO1: Understand the functions of important animal physiological systems including digestion, cardiorespiratory and renal systems.

CO2: Understand the muscular system and the neuro-endocrine regulation of animal growth, development and metabolism with a special knowledge of hormonal control of human reproduction.

CO3: Describe the structure, classification and chemistry of Biomolecules and enzymes responsible for sustenance of life in living organisms

CO4: Develop broad understanding the basic metabolic activities pertaining to the catabolism and anabolism of various Biomolecules

CO5: Describe the key events in early embryonic development starting from the formation of gametes upto gastrula ion and formation of primary germ layers.

SEMESTER –IV (paper –V)

Immunology and Animal Biotechnology

Course Outcomes: This course will provide students with a deep knowledge in immunology, and animal biotechnology and by the completion of the course the graduate shall able to –

CO1: To get knowledge of the organs of Immune system, types of immunity, cells and organs

of immunity.

CO2: To describe immunological response as to how it is triggered (antigens) and regulated (antibodies)

CO3: Understand the applications of Biotechnology in the fields of industry and agriculture including animal cell/tissue culture, stem cell technology and genetic engineering.

CO4: Get familiar with the tools and techniques of animal biotechnology.

CO5: To trace the history and development of immunology

CO6: To provide students with a foundation in immunological processes

CO7: To be able to compare and contrast the innate versus adaptive immune systems and humoral versus cell-mediated immune responses

CO8: Understand the significance of the Major Histocompatibility Complex in terms of immune response and transplantation

CO9: To provide knowledge on animal cell and tissue culture and their preservation

CO10: To empower students with latest biotechnology techniques like stem cell technology, genetic engineering, Hybridoma technology, transgenic technology and their application in medicine and industry for the benefit of living organisms

CO11: To explain in vitro fertilization, embryo transfer technology and other reproduction manipulation methodologies.

CO12: To get insight in applications of recombinant DNA technology in agriculture, production of therapeutic proteins.

CO13: To understand principles of animal culture, media preparation.

SEMESTER –V (paper –6A)

SUSTAINABLE AQUACULTURE MANAGEMENT

Course Outcomes: By the completion of the course the graduate should be able to –

CO1: Students can understand basic scenario of aquaculture, identify different cultivable species differentiate types of aquacultures and its systems

CO2: Can get the basic knowledge of construction of fish pond, Understand the importance of water quality.

CO3: Can understand the breeding and hatchery management in aquaculture and understand the importance of fisheries in income generation food production and employment and researches.

CO4: Know the sources of seed and feed available for aqua forms. Know the knowledge management

of carp and shrimp culture

CO5: Analyse the importance of disease management

SEMESTER –V (paper –7A)

POST-HARVEST TECHNOLOGY OF FISH AND FISHERIES

Course Outcomes: By the completion of the course the graduate should able to –

CO1: Can get the techniques of handling of fish for preservation

CO2: Get the knowledge of fish preservation.

CO3: They should know processing and by-products of fish.

CO4: Get the knowledge of importance of sea weed products.

CO5: They should the importance of sanitation quality assurance and certification for aqua products.

SEMESTER –V (paper –6B)

Course Outcomes: By the completion of the course the graduate should able to –

CO1: Can understands the basic features of dairy animals / breeds.

CO2: Can analyse the reproductive system of dairy animals.

CO3: Acquire the technical skills of breeding mechanism.

CO4: Apply the knowledge of traits & methods of selection of dairy animals.

CO5: Can differentiate breeding techniques of dairy farm.

SEMESTER –V (paper –7B)

Course Outcomes: By the completion of the course the graduate should able to –

CO1: Can understand and apply the knowledge of systems of farming.

CO2: Can acquire the skill of management of dairy animals and apply the same.

CO3: Can understand the skills of pasteurisation & sterilization methods.

CO4: Can able to produce dairy products by that get employability.

CO5: Can acquire the skills of separation techniques of cream from milk