

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

DEPARTMENT OF ZOOLOGY & AQUACULTURE TECHNOLOGY

2021-2022

ZOOLOGY Courses offered

Semester	Course	Course Title	Course type (T/L/P)
I	PAPER-I	Animal Diversity Biology Of Non-Chordates	T
		Animal Diversity Biology Of Non-Chordates Practical	P
II	PAPER-II	Animal Diversity Biology Of Chordates	T
		Animal Diversity Biology Of Chordates Practical	P
III	PAPER-III	Cell Biology ,Genetics ,Molecular Biology And Evolution	T
		Cell Biology ,Genetics ,Molecular Biology And Evolution Practical	P
IV	PAPER-IV	Physiology,Cellular Metabolism And Embryology	T
		Physiology,Cellular Metabolism And Embryology Practical	P
	PAPER-V	Immunology & Animal Biotechnology	T
		Immunology & Animal Biotechnology Practical - V	P
V	PAPER-V	Animal Biotechnology	T
		Animal Biotechnology Practical– V	P
	PAPER -VI	Animal Husbandry	T
		Animal Husbandry Practical– VI	P
VI Elective	PAPER- VIIA	Immunology	T
		Immunology Practical- VIIA	P
Cluster	PAPER VIIIA	Principles Of Aquaculture	T
		Principles Of Aquaculture Practical- VIIIA	P
	PAPER VIIIB	Aquaculture Management	T
		Aquaculture Management Practical- VIIIB	P

	PAPER VIII C	Post Harvest Technology	T
		Post Harvest Technology Practical - VIII C	P

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 Molluscs

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 His to compatibility 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 or recombinant DNA technology in agriculture, production of therapeutic proteins.

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

SEMESTER –V (paper –V)

ANIMAL BIOTECHNOLOGY

CO1: Understand the applications of Biotechnology in the fields of industry and agriculture including animal cell/tissue culture, stem cell technology and genetic engineering.

CO2: Get familiar with the tools and techniques of animal biotechnology.

CO3: To provide knowledge on animal cell and tissue culture and their preservation

CO4: 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

CO5: To explain in vitro fertilization, embryo transfer technology and other reproduction manipulation methodologies.

CO6: To get insight in applications or recombinant DNA technology in agriculture, production of therapeutic proteins.

CO7: To understand principles of animal culture, media preparation.

SEMESTER –V (paper –VI)

ANIMAL HUSBANDRY

Course Outcomes: This course will provide students with a deep knowledge in

CO1: Understand the field level structure and functioning of poultry sector and its role in food production.

CO2: Comprehend pertaining skills and their application to establish poultry industry. Understand the pre-requisites for starting a Dairy farm

CO4: Recognize different breeds of Cows & buffaloes following safety precautions.

CO5: Prepare and give recommended feed and water for livestock. Maintain health of livestock along with productivity

CO6: Vaccination of cattle, nutrients requirements. Entrepreneurship i.e., Effectively market dairy products

CO7: Ensure safe and clean dairy farm and Standard safety measures to be taken in establishing an industry. Efficiently start and manage to establish or develop a Dairy Industry

SEMESTER –VI

IMMUNOLOGY Course Outcomes: This course will provide students with a deep knowledge in immunology, and by the completion of the course the graduate shall be 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: To trace the history and development of immunology

CO4: To provide students with a foundation in immunological processes

CO5: To be able to compare and contrast the innate versus adaptive immune systems and humoral versus cell-mediated immune responses

CO6: Understand the significance of the Major Histocompatibility Complex in terms of immune response and transplantation

SEMESTER –VI

Cluster Elective Paper: VIII-B-1 PRINCIPLES OF AQUACULTURE

CO1: Students can understand basic scenario of aquaculture.

CO2: Can identify different cultivable species

CO3: Can differentiate types of aquacultures and its systems

CO4: Can get the basic knowledge of construction of fish pond,

CO5: Know the sources of seed and feed available for aqua forms. Know the knowledge management of carp and shrimp culture

SEMESTER –VI

Cluster Elective Paper: VIII-B-2 AQUACULTURE MANAGEMENT

CO1: Can understand the breeding and hatchery management in aquaculture.

CO2: Understand the importance of water quality.

CO3: Should know the feed management practices.

CO4: Analyse the importance of disease management

CO4: Understand the importance of fisheries in income generation food production and employment and researches.

SEMESTER –VI

Cluster Elective Paper: VIII-B-3 POSTHARVEST TECHNOLOGY

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.