KSN GOVERNMENT DEGREE COLLEGE FOR WOMEN, ANANTHAPURAMU
DEPARTMENT OF ZOOLOGY
ATTAINMENT OF COURSE OUTCOMES

B.Sc., ZOOLOGY

PROGRAMME OUTCOMES (POs)

PO 1	**Relevance of the Principles:** To understand the basic laws of nature, fundamental principles, and the scientific theories related to various phenomena and their relevance in the day-to-day life.
PO 2	**Critical Thinking, Problem Solving Skills:** Acquire the skills in handling scientific instruments, planning and performing in laboratory experiments. The skills of observations and drawing logical inferences from the scientific experiments.
PO 3	**Interdisciplinary learning:** Realizing that knowledge of subjects in other branches such as humanities, performing arts, social sciences etc. can have greater influence and inspiration in evolving new scientific theories and inventions, and understanding the importance of interdisciplinary study in every walk of life.
PO 4	**Moral and Ethical Values:** To imbibe ethical, moral and social values in personal and social life leading to highly cultured, civilized and responsible personality development.
PO 5	**Scientific Temper:** Analyzing the given scientific data critically and systematically and the ability to draw the objective conclusions. Acquire the knowledge with facts and figures related to various subjects in pure sciences such as Botany, Chemistry, Computer Science, Electronics, Mathematics, Physics, and Zoology etc.
PO 6	**Technical and Intellectual proficiency:** To give a glimpse of designing solutions for communication problems with specific needs with appropriate technology thus developing healthy competition and setting parameters for excellence.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Department of Zoology, KSN Government Degree College for Women, Anantapur, offers Three Year (comprising 6 semesters) Undergraduate Programme in Zoology with objective of empowering students to acquire all-inclusive understanding of Zoology as an academic discipline. Upon completion of B. Sc. Zoology Degree Programme successfully, the students shall acquire the following skills and competencies.

PSO1	Understand the importance of plants ,their diversity and its conservation
PSO2	Achieve knowledge of pure and applied botany. Students acquire fundamental Botanical knowledge through theory and practical's.
PSO3	Understand good laboratory practices and safety. Understand experiments in zoology
PSO4	Understand health and environmental protection and to solve the pollution problems.
PSO 5	To create awareness about cultivation, conservation and sustainable utilization of biodiversity

COURSE OUTCOMES (COs)

Course Code: S1-321
Course Name: Biology of Non Chordates

Upon completion of this course, the student will be able to:		PO
CO 1	Get a concrete idea of the evolution, hierarchy and classification of invertebrate Phyla	1,3,5
CO 2	Getting an overview of typical examples in each invertebrate major phyla	1,5
CO 3	Demonstrate anatomical and physiological attributes of each animal group and why these have led to their success.	1,2,5
CO 4	Identify various larval stages and development in invertebrate groups	2,5
CO 5	State the outline of animal classification of non-chordates	2,6
CO6	Categorize the diversity found in the invertebrate groups of animals like Arthropoda,Mollusca and Echinodermata.	1,2,6

Course Code: S3 - 321
Course Name: Cell Biology, Genetics and Evolution

Upon completion of this course, the student will be able to:		PO
CO 1	Explain general characteristics and classification of different classes of vertebrates	1,5
CO 2	Describe the morphology, habit and habitat. Systematic position and various systems in the chordate animals	1,2,3
CO 3	List the various vertebrate animals in a given class.	1,5
CO 4	Identify poisonous and non-poisonous snakes.	1,2
CO 5	Explain various adaptations in avian group as well as migration and flight in birds	1,2,5
CO 6	Categorize the diversity found in the vertebrate groups of animals like reptiles,birds and mammals.	1,5

Course Code: S3 - 321
Course Name: Cell Biology, Genetics and Evolution

Upon completion of this course, the student will be able to:		PO
CO 1	Differentiate between prokaryotes and eukaryotes	2,5
CO 2	Explain the structure and functions of the nucleus, different cell organells.	3,5
CO 3	Explain Mendel's principle, its extension and chromosomal basis and determination of gene action from genotype to phenotype and concepts of inheritance	1,2,3,5
CO 4	Describe the chromosome anomalies and associated diseases	2,5,6
CO 5	Describe the concept of origin of life and theories of origin of life	1,2,3
CO 6	Explain the theories of organic evolution.	1,3,5

Course Code: S4 - 321
Course Name: Embryology Physiology and Ecology

Upon completion of this course, the student will be able to:		PO
CO 1	Describe the key events in early and systematic embryological development	2,5
CO 2	Explain the principles and process of fertilization and cleavage	1,5
CO 3	Imparts knowledge about various metabolic and physiological mechanisms of the human body.	1,2,6
CO 4	Understand the function of various systems	2,5
CO 5	Describe the nature of ecosystem, productivity, food webs, energy flow	1,3,4
CO 6	Understand animal interactions with the environment	1,3,6
CO 7	Compare animal distribution in different zoogeographical realms.	2,3,5

Course Code: S5 - 321
Course Name: Animal Biotechnology

Upon completion of this course, the student will be able to:		PO
CO 1	Aquire the knowledge of tools used in Recombinant DNA Technology	2,5,6
CO 2	Familiar with the techniques Biotechnology such as PCR, Hybridization, different gene delivery techniques	1,2,3
CO 3	Knowledge of animal cells in culture, growth of cell lines	1,5
CO 4	Imparts the Knowledge to culture animal cells in artificial media.	2,5
CO 5	Illustrate the applications of Biotechnology in various fields	3,4,6
CO 6	Use of Biotechnology in variety of industrial processes.	5,6

Course Code: **S5 - 322**
Course Name: **Animal Husbandry**

Upon completion of this course, the student will be able to:		PO
CO 1	Understand the principles of Poultry housing and feed management in different stages of Birds	1,5,6
CO 2	understand the role of nutrition in milk production and egg production	3,5
CO 3	Illustrate Different Breeds of Dairy animals and buffaloes	2,5
CO 4	Illustrate Different Breeds of Dairy animals and buffaloes	5,6
CO 5	understand how the application of modern animal production technologies and management practices impact their production	2,6

Course Code: S6 - 321
Course Name: Immunology

Upon completion of this course, the student will be able to:		PO
CO 1	Provides basics knowledge about immune system and allows the student to create insight as how to improve their immune system and good health.	3,5
CO 2	Interactions of antigens, antibodies, complements and other immune components	1,5
CO 3	Distinguish Innate immunity and Acquired Immunity	2,5
CO 4	Explain the concepts of immunity, hyper sensitivity,self-nonself immune response, autoimmune diseases	3,5
CO 5	Explain the principle and application of the common techniques used in Immunology	1,5,6
CO 6	Understanding of immune mechanisms in disease control, vaccination, process of immune interactions	3,6

Course Code: S6 -322
Course Name: Principles of Aquaculture

Upon completion of this course, the student will be able to:		PO
CO 1	Course provides them comprehensive understanding about aquatic ecosystem and various economical important fishes.	3,5
CO 2	Enlist the diagnostic features of shrimps and fishes	2,5
CO 3	Gain the knowledge of Different types of Aquaculture systems and Culture Practices	3,6
CO 4	Explain the criteria for selection of site for construction and design of Aqua farms	2,6
CO 5	Describe the methods of freshwater prawn culture , Carp culture and its management	3,5
CO 6	Illustrate the various composite fish culture with significance of each type.	2,5,6
CO 7	Explain the methods of pearl culture and pearl harvesting	2,5

Course Code: S6 - 323
Course Name: Aquaculture Management

Upon completion of this course, the student will be able to:		PO
CO 1	Learn the basic principles involved in the culture and breeding of common edible fishes	1,5
CO 2	Explain the process of Hatchery Manangement	3,6
CO 3	Acquire the knowledge of Water quality parameters and soil characteristics suitable for shrimp and fish culture	2,3,6
CO 4	Understand the principles of disease diagnosis and health management	1,3
CO 5	Identify the fish diseases and the causative organisms.	2,3,5
CO 6	Explain the different types of Feed Strategies and feed Management	2,6
CO 7	Gain the knowledge of Economics and Marketing Principles of Aquaculture	1,3,6

Course Code: S6 - 324
Course Name: Post Harvest Technology

Upon completion of this course, the student will be able to:		PO
CO 1	Learn the Basic principles of preservation of fish	1,5
CO 2	Demonstrate the methods of packaging and transport of fish and shrimp	2,6
CO 3	Illustrate techniques of fish harvesting, preservation & processing	1,6
CO 4	Gain the knowledge of the fish products and Byproducts	2,5
CO 5	Compare the techniques used in fishery development.	2,6
CO 6	Understand the importance of Sanitaion, Quality management in processing Plants	2,3,4