GOVT. DEGREE COLLEGE , R. S. PURA
COURSE OUTCOMES : ZOOLOGY (ALL SEMESTERS)

SEMESTER:- FIRST, (CORE COURSE)

COURSE CODE: UZOTC-101

TITLE OF PAPER: ANIMAL DIVERSITY

NUMBER OF UNITS: 05 (FIVE)

COURSE CONTENTS:	OUTCOME OF COURSES
UNIT 1: Protista, Porifera and Cnidaria **UNIT 2: Helminthes and Annelida** **UNIT 3: Arthropoda, Mollusca and Echinodermata** **UNIT 4: Protochordates, Agnatha, Pisces and Amphibia** **UNIT 5: Reptiles, Aves and Mammals**	**This paper shall enable the students to understand:** *-At the end of the course the students will be able to comprehend and appreciate the huge diversity of life animal forms existing on the earth ranging from the simplest, smallest protozoan to the highly complex and largest aquatic or land vertebrates. *-They will learn the basics of systematics and understand hierarchy of different categories. *-Students will gain an insight into diagnostic characteristics of different phyla through brief studies of examples while going through the various aspects of physiology, morphology, habits, habitats and adaptations in non-chordate and chordate life forms. *-Besides, they will also be able to obtain an overview of phylogenetic relationships and evolutionary trends of these organisms.

	***-it make us undserstand that** each species, no matter how small, all have an **important role** to play in ecosystem. To provides knowledge for protection of water resources, Soils formation and protection, Nutrient storage and recycling, Pollution breakdown and absorption, Contribution to climate stability, Maintenance of ecosystems, Recovery from unpredictable events. *-it increases social benefits, such as Research, education and monitoring, Recreation and tourism, Cultural values.
<u>SEMESTER:- SECOND</u>, (CORE COURSE) **COURSE CODE: UZOTC-201** **TITLE OF PAPER: COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES** NUMBER OF UNITS: 5	
COURSE CONTENTS:	OUTCOME OF COURSES
UNIT 1: Integumentary skeletal system **UNIT 2: Digestive and Respiratory System**	**This paper shall enable the students to understand:** *-The course will help students gain a knowledge base for understanding vertebrate anatomy and evolution by explaining to them the basic structures and organization of anatomical systems, their development and function and their modifications in the major transitions in vertebrate evolution. *- It will help students appreciate the importance of comparative vertebrate biology in understanding our own biology by learning

UNIT 3: Circulatory and Urinogenital System **UNIT 4: Nervous System and Sense organ** **UNIT 5: Developmental System**	about the organization, function and adaptive strengths and weaknesses of our own bodies, and how these traits have been shaped by our evolutionary history. *-At the end of the course, the students will develop skills of integrative and synthetic thinking by demonstrating how to organize anatomical details into general explanations based on developmental, functional and evolutionary principles, how to draw connections between anatomical changes and changes in habitat, lifestyle, and patterns of evolutionary diversification; *-how to use fundamental concepts of comparative anatomy to construct scientific explanations and formulate new questions and lines of inquiry. *-To determining relationships between different species. *- To understand the course of evolution from their common ancestors by analyzing the undergone adaptive changes. ***- To understand a**nalogous structures who serve similar functions, but they have different origins and are entirely different in their organization. *-To know homologous structures who have similar structural organization, origin but have different functionality.

SEMESTER: THIRD, (CORE COURSE)

COURSE CODE: UZOTC-301

TITLE OF PAPER: PHYSIOLOGY AND BIOCHEMISTRY

Number of Units: 05

COURSE CONTENT:	OUTCOME OF COURSES:
Unit-1: Physiology of nerves, muscles, digestion Unit-2: Physiology of respiration and excretion Unit-3: Cardiovascular system Unit-4: Physiology of reproduction and endocrine glands Unit-5: Carbohydrate, Lipid and Protein metabolism	**This paper shall enable the students to understand:** *- To develop detailed understanding of mechanism of digestion, muscular movement and to impart knowledge regarding structure and functions of nerves and muscles to students. *-To provide better understanding of mechanism of respiration and excretion. *-To get better understanding of structure of heart, blood composition and cardiac cycle *- To provide knowledge about reproductive system and endocrine glands and their

	mechanism of action *-To impart adequate information to the students regarding metabolism of macro molecules such as carbohydrates, lipids and proteins.
SEMESTER: THIRD, (SKILL) (CORE COURSE) **COURSE CODE: UZOTS-303** **TITLE OF PAPER: APICULTURE** NUMBER OF UNITS: 5	
COURSE CONTENT:	OUTCOME OF COURSES:
Unit-1: BIOLOGY OF BEES Unit-2: REARING OF BEES Unit-3: BEE ENEMIES AND DISEASES Unit-4: BEE ECONOMY Unit-5: ENTREPRENEURSHIP IN APICULTURE	**This paper shall enable the students to understand:** *- To understand the structure and life cycle of honey bee. *-To provide detailed information regarding rearing of honey-bees. *-To give information about the different diseases and enemies of honey-bees. *-To give knowledge regarding productions of honey-bees. *-To enable the students to start self employment in the field.
<u>SEMESTER:- FOURTH</u>, (CORE COURSE) **COURSE CODE: UZOTC-401** **TITLE OF PAPER: PRINCIPLES OF GENETICS AND EVOLUTIONARY**	

BIOLOGY NUMBER OF UNITS: 5 COURSE CONTENTS:	OUTCOME OF COURSES:
Unit -1: Cell cycle, Mendelism and Neo-Mendelism Unit -2: Linkage and Crossing over Unit -3: Chromosomal and Gene Mutation and mechanism of Sex Determination Unit -4: Evolutionary Biology Unit -5: Population Genetics and Species Concept	**This paper shall enable the students to understand:** - To develop understanding regarding the process of inheritance and cell division. -To provide information regarding how genes are inherited and new combinations are formed. -To provide detailed information about mutations and sex determination. - To provide an overview of concept of evolution and detailed understanding of theories and evidences of evolution. -To provide knowledge about origin of new species and changes in the population.
<u>SEMESTER:- FOURTH</u>, (SKILL)(CORE COURSE) **COURSE CODE: UZOTS- 403** **TITLE OF PAPER: AQUARIUM FISH KEEPING** NUMBER OF UNITS: 5 COURSE CONTENTS:	OUTCOME OF COURSES:
Unit-1: Introduction to Aquarium Fish Keeping	**This paper shall enable the students to understand:** *-To provide information about different types

Unit-2: Aquarium fishes Unit-3: Food and feeding of Aquarium fishes Unit-4: Fish Transportation Unit-5: Maintenance of Aquarium	of aquarium fishes. *-To acquaints student about history of fish keeping and types of aquarium. *-To give information about food given to aquarium fishes. *-To provide information required for transportation of aquarium fishes. *-it enable the students to gain detailed information for maintenance of aquariums
SEMESTER –FIFTH **COURSE CODE:- UZOTC-501** **TITLE OF THE PAPER: APPLIED ZOOLOGY** NUMBER OF UNITS: 5 COURSE CONTENT:	OUTCOME OF COURSES:
UNIT 1: Introduction to Parasitology **UNIT 2:** Epidemiology of Parasitic Diseases	**This paper shall enable the students to understand:** *-Concept of Immunity and parasitological terms, types of parasites, types of hosts, interspecific and intraspecific relationships of organisms. *- Students get familiar with pathogenicity, transmission, life cycle, prevention and control of some parasitic helminthes, bacterial and protozoan diseases

UNIT 3: Animal Biotechnology	*- Imparts the knowledge of different methods of transgenesis, transgenic animals and their applications and also some methods of animal propagation.
UNIT 4: Animal Husbandry and Poultry	*- Knowledge of integrated animal farming, indigenous and exotic breeds of dairy cattle and poultry birds, management of broilers, eggs processing and preservation.
UNIT 5: Aquaculture	*- Understanding concepts, scope and genetic improvement of aquaculture industry, various cultures like prawn, pearl and composite fish culture.
SEMESTER –FIFTH (SKILL) **COURSE CODE:- UZOTS-501** **TITLE OF THE PAPER: PUBLIC HEALTH AND HYGIENE** NUMBER OF UNITS: 5	
COURSE CONTENT:	OUTCOME OF COURSES:
	This paper shall enable the students to understand:
UNIT 1: Introduction to Public Health and Hygiene	*-Concepts of public health, hygiene, medical care, balanced diet, various health policies of the government and major nutritional deficiency diseases.
UNIT 2: Environment and Health Hazards	*-Awareness about environmental degradation, because of solid waste, e-waste, bio-medical wastes and pollution, of air, water, soil. Various environmental related issues like climate change, global warming, acid rain etc. and health impact assessment.
UNIT 3: Communicable Diseases	

UNIT 4: Life Style related Non-Communicable Diseases **UNIT 5:** Social Health Problems	*-Concept of communicable diseases, causative agents, pathogenicity and control measures of some common communicable diseases. *-Knowledge of some non-communicable diseases, their cause and prevention through dietary and lifestyle modifications, some mental health diseases and their modifications. *-Student should be aware of various social issues related to smoking, alcoholism, drug addiction and de-addiction, causes, treatment and prevention of AIDS, role of voluntary organizations and eco-friendly environmental practices.
SEMESTER:- SIXTH, **COURSE CODE:- UZOTC-601** **TITLE OF PAPER: INSECT VECTOR AND DISEASES** NUMBER OF UNITS: 5 COURSE CONTENTS:	OUTCOME OF COURSES:
UNIT 1: Introduction to Insect Vectors **UNIT 2:** Mosquitoes and Flies as Disease Vectors	**This paper shall enable the students to understand:** *-Understanding general and specific morphological features of insects, role of insects in spread of diseases as reservoirs, carrier and vectors. *-Imparting knowledge of some common diseases spread by mosquitoes, sand flies and house flies *-Student should be aware of some diseases

UNIT 3: Bugs and Fleas as Disease Vectors **UNIT 4:** Louse as Disease Vectors **UNIT 5:** Introduction to Vector Control	caused due to fleas and blood- sucking bugs. *-Understanding of different types of human louse and some of the louse-borne diseases. *-Student should understand aims, objectives and importance of vector control, concept of integrated vector management and success stories of India, Thailand and Srilanka.
<u>SEMESTER:- SIXTH</u>, (SKILL) **COURSE CODE:- UZOTS-603** **TITLE OF PAPER: SERICULTURE** **NUMBER OF UNITS: 5** COURSE CONTENTS:	OUTCOME OF COURSES:
UNIT 1: Introduction **UNIT 2:** Silkworm Biology and Rearing **UNIT 3:** Mulberry and Silk Diseases	**This paper shall enable the students to understand:** *-Definitions, status and scope of Sericulture, exotic and indigenous races, types of silkworms and silk fibre, mulberry and non-mulberry sericulture. *- Mulberry cultivation and mulberry varieties, silkworm breeds and silkworm rearing, silk gland structure and silk secretion. *- Student should be aware of some mulberry and silkworm diseases and their control measures, types and formulation of disinfectants. Silkworm seed production. *- Knowledge of rearing house and appliances, early and late stage rearing techniques, type of mountages used, spinning, harvesting and

UNIT 4: Rearing of Silkworms **UNIT 5:** Silk Reeling and Sericulture Entrepreneurship	storage of cocoons. *- Knowledge of rearing house and appliances, early and late stage rearing techniques, type of mountages used, spinning, harvesting and storage of cocoons. *- Student should know about sericulture entrepreneurship, silk reeling methods, raw silk testing, grading and its types, silk throwing and silk weaving methods.