Rayat Shikshan Sanstha's

Annasaheb Awate Arts, Commerce and Hutatma Babu Genu Science College

Manchar, Tal. Ambegaon, Dist Pune

DEPARTMENT OF ZOOLOGY

COURSE OUTCOMES

CLASS: F.Y.B.Sc. **SEMESTER: I**

Course/ Paper: Animal Diversity I	
CO	Statement
CO1	To understand the Animal diversity around us.
CO2	To understand the underlying principles of classification of animals.
CO3	To understand the terminology needed in classification.
CO4	To understand the differences and similarities in the various aspects of classification.
CO5	To classify invertebrates and to be able to understand the possible group of the invertebrate observed in nature.to understand our role as a caretaker and promoter of life.

Course/ Paper: Animal Ecology	
CO	Statement
CO1	The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population.
CO2	To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature.
CO3	The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community
CO4	The learner will be able to link the intricacies of food chains, food webs and link it with human life for its betterment and for non-exploitation of the biotic and abiotic components
CO5	The working in nature to save environment will help development of leadership skills to promote betterment of environment

COURSE OUTCOMES

Class : F.Y.B.Sc. **Semester: II**

Paper: Animal Diversity II	
CO	Statement
CO1	To understand the Animal diversity around us.
CO2	To understand the underlying principles of classification of animals.
CO3	To understand the terminology needed in classification
CO4	To understand the differences and similarities in the various aspects of classification
CO5	To classify invertebrates and to be able to understand the possible group of the invertebrate observed in nature.to understand our role as a caretaker and promoter of life.

Paper: Cell Biology	
CO	Statement
CO1	The learner will understand the importance of cell as a structural and functional unit of life.
CO2	The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development.
CO3	The dynamism of bio membranes indicates the dynamism of life. Its working mechanism and precision are responsible for our performance in life.
CO4	The cellular mechanisms and its functioning depend on endo-membranes and structures. They are best studied with microscopy.

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COURSE OUTCOMES

CLASS: SYBSc **SEMESTER: III**

Paper: Animal Diversity III

CO	Statement
CO1	To understand the origin and advancement of higher vertebrates (tetrapoda).
CO2	To understand general characters of different groups of higher vertebrates.
CO3	To classify vertebrates and to become able to understand the possible group of vertebrates observed in nature.
CO4	To understand different behaviours and adaptations in higher vertebrates
CO5	To understand affinities among different groups of higher vertebrates.

Paper: Applied Zoology I

CO	Statement
CO1	To understand the basic life cycle of the honeybees, beekeeping tools and equipments.
CO2	To learn for managing beehives for honey production and pollination.
CO3	To understand the basic information about fishery, cultural and harvesting methods of fishes.
CO4	To understand fish preservation techniques.
CO5	To understand the biology, varieties of silkworms and the basic techniques of silk production and harvesting of cocoons
CO6	To learn the different silkworm species and their host plants.
CO7	To study types of agricultural pests and Major insect pests of agricultural importance.

Paper: Animal Diversity IV	
CO	**Statement**
CO1	To understand Salient features of class Reptilia with one example (name only) – Chelone, Calotes.
CO2	To understand Venomous and Non-venomous snakes – Cobra, Russell's viper, Rat snake, Grass snake
CO3	To understand Snake venom, symptoms, effect and cure of snake bite, first aid treatment of snakebite
CO4	To understand Flight adaptations in birds.
CO5	To understand Types of Beaks and feet in birds.

Paper: Applied Zoology II	
CO	**Statement**
CO1	To illustrate Life cycle, Colony organization and Division of labour.
CO2	To understand Bee behavior and communication (Round Dance and Wag-Tail Dance).
CO3	To understand Bee keeping equipment's
CO4	To understand Bee keeping and seasonal management.
CO5	To understand 'Bee products (composition and uses)

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COURSE OUTCOMES

CLASS: TYBSc **SEMESTER: V**

Paper: Pest Management	
CO	**Statement**
CO1	Explain why identification of the pest is the first step in developing an effective pest control strategy
CO2	Explain the differences between continuous pests, sporadic pests, and potential pests.
CO3	Explain what is meant by prevention, suppression, and eradication of pests.
CO4	Describe "thresholds" and why they are an important consideration in developing a pest control strategy
CO5	Describe "monitoring" as it relates to pest control and explain why it is important to pest control strategy.
CO6	Know and how to develop an IPM program.

Paper: Histology	
CO	Statement
CO1	To understand the histological aspects of mammalian organs.
CO2	To study the important features of different types of tissues in organ system
CO3	To understand the classification of various types of basic tissues.
CO4	To study structure & functions of various tissues in organ system.
CO5	To understand histological structure of various glands and its functions
CO7	To describe pituitary, thyroid and adrenal gland

Paper: Biological Chemistry	
CO	**Statement**
CO1	To understand the basic concepts and significance of biochemistry.
CO2	To understand the basic concepts pH and Buffers
CO3	To understand the chemical structures of carbohydrate, and their biological and clinical significance
CO4	To understand the structure and importance of proteins and lipids
CO5	. To understand the variations in enzyme activity and kinetics

Paper: Genetics	
CO	**Statement**
CO1	Students will be taught Mendelian genetics, their principles and gene interaction.
CO2	They learn about chromosomal aberrations and structure of chromosomes
CO3	The student will gain a basic understanding on human genetics and hereditary.
CO4	The paper helps in highlighting the scope and significance of genetics by imbibing the principles of hereditary genetic transmission and interactions of gene with environment.
CO5	It also helps students to learn the molecular aspects of genetics disorders and mutations.
CO6	It helps the students to appreciate the concepts of gene and relationship between genotype and phenotype.

Paper: Developmental Biology	
CO	**Statement**
CO1	To explain the fundamentals of developmental biology.
CO2	To discuss the various theories of developmental biology.
CO3	To illustrate the process of gametogenesis and fertilization.
CO4	To discuss the types of cleavage.
CO5	To discuss the embryology of chick.

Paper: Parasitology	
CO	Statement
CO1	To understand the basic terminologies in parasitology.
CO2	To understand the concepts of animal association with examples.
CO3	To understand the morphology and life cycle of common parasites (Protists and Platyhelminthes).
CO4	To understand the phenomenon of Host-parasite relationship.
CO5	Explain the importance of arthropod vectors with examples.

COURSE OUTCOMES

CLASS: TYBSc **SEMESTER: VI**

Paper: Medical & Forensic Zoology	
CO	**Statement**
CO1	To understand the scope, need and History of Forensic Science.
CO2	To understand the role of different institutes & allied institutes of Forensic Science.
CO3	To understand the various branches of Forensic Sciences from Life Sciences.
CO4	To understand human physiology, post mortal investigations.
CO5	To understand knowledge of handling different types of evidences and their examinations

Paper: Animal Physiology	
CO	**Statement**
CO1	To acquaint students with the principles and basic facts of Animal Physiology and with some of the laboratory techniques and equipment used in the attainment of physiological data. The importance will be on mammalian.
CO2	The course will focus on organ-system physiology,
CO3	The laboratory module of the course is designed to support the topics discussed in theory lecture, as well as to acquaint students with some of the laboratory techniques and equipment used in the gaining of physiological facts.
CO4	Where appropriate, basic chemical and physical laws will be reviewed in order to enhance and to promote student understanding.
CO5	Furthermore, emphasis will be placed on nutritive, circulatory, respiratory, excretory, muscular, nervous, reproductive and endocrine physiology

Paper: Molecular Biology	
CO	**Statement**
CO1	The course aims to provide students with an introduction of the underlying molecular mechanisms of various biological processes in cells and
CO2	To understand the Structure of DNA and RNA, DNA and RNA as genetic materia
CO3	To understand the Central Dogma of Molecular Biology
CO4	To understand the concept of gene regulation
CO5	To understand the DNA Damage and Repair
CO6	The course aims to develop basic understanding of structure-function relationships of nucleic acids and proteins

Paper: Entomology	
CO	**Statement**
CO1	To understand the scope of Entomology and general characters of Insects
CO2	To study the morphology and anatomy of Insects
CO3	To learn the concept of social organization in Insects.
CO4	To understand metamorphosis in Insects.
CO5	To study the economically important insects and Pest management of harmful insects.

Paper: Techniques in Biology	
CO	Statement
CO1	To Understand Methods of tissue fixation: Chemical fixation and physical fixation.
CO2	To Understand Procurement of tissue and importance of fixation of tissues.
CO3	To Understand Dehydration, clearing, impregnation, embedding and block making.
CO4	To Understand Types of microtomes.
CO5	To Understand Section cutting: steps and precautions, common faults in section cutting, reasons & remedies
CO6	To Understand Mounting and spreading of ribbons

Paper: Evolutionary Biology	
CO	**Statement**
CO1	To provide comprehensive overview of Concept of Evolution.
CO2	To explain Origin of Life especially Prokaryotes as well as Eukaryotes in detail.
CO3	To explore salient features of various theories of evolution comprising of Lamarckism, Darwinism and Neo-Darwinism.
CO4	To impart detailed understanding of Analogy, Homology, Paleontological Evidences, Embryological Evidences and Molecular Phylogeny.
CO5	To provide adequate information about Geological Time Scale and Neutral Theory of Molecular Evolution.
CO6	To develop comprehensive knowledge regarding various Sources of Variations and their role in evolution