Satyaniketan’s

**Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur**

**Annual Teaching Planning 2022-2023**

**F.Y. B.Sc. Zoology** Semester I

**Subject Name -: ZO 112 – Animal Ecology**

**Teacher’s Name- Prof. Arote J. D**

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| **Sr. No.** | **Month** | **Topic** | **No. of Periods** |
|  | July 2022 | 1. Introduction to Ecology  1.1 Concepts of Ecology, Environment, Population, Community, Ecosystem, Biosphere, Autecology and synecology. | (02) |
|  | August 2022 | 2. Ecosystem  2.1 Types of ecosystems  2.2 Structure and Composition of Ecosystem  2.3 Food chain: Detritus and grazing food chains, Food web, Energy flow through the ecosystem, Ecological pyramids: Number, Biomass, and Energy.  2.4 concept of Eutrophication in lakes and rivers. | (08) |
|  | September 2022 | 3. Population  3.1Characteristic of population.  3.2Exponential and logistic growth,  3.3 Population regulation  Population interactions, Gause’s Principle with laboratory and field interactions,  3.4 Quadrate, line and belt transect methods. | (08) |
|  | October 2022 | 4. Community  4.1Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Eco tone and edge effect; Ecological succession with one example. | (07) |
| 5. | November 2022 | 5. Animal interactions  5.1Introduction to Animal interactions  5.2 Types of Animal interactions  5.2.1-Competition  5.2.2- Beneficial Associations: .  5.3 Antagonistic associations | (05) |
| **Total** | | | **30** |

Satyaniketan’s

**Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur**

**Annual Teaching Planning 2022-2023**

**S.Y. B.Sc. Zoology** Semester III

**Subject Name -: ZO 232 – Applied Zoology-I**

**Teacher’s Name- Prof. Arote J. D**

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| **Sr. No.** | **Month** | **Topic** | **No. of Periods** |
|  | July 2022 | **1) Sericulture: 16**  1.1 An introduction to Sericulture, Study of different types of silk moths, their distribution, Taxonomic position and varieties of silk produced in India: Mulberry, Tassar, Eri and Muga silk moths.  1.2 External Morphology and life cycle of Bombyxmori. | 04 |
|  | August 2022 | 1.3 Cultivation of mulberry: a) Varieties for cultivation, b) Rain fed and irrigated mulberry cultivation- Fertilizer schedule, Pruning methods and leaf yield.  1.4 Harvesting of  1.5 Silk worm | 06 |
|  | September 2022 | 1.6 Preparation of cocoons for marketing.  1.7 Post harvest processing of cocoons  1.8 Biotechnological and biomedical applications of silk | 06 |
|  | October 2022 | **2) Agricultural Pests and their control: 14**  2.1 An introduction to Agricultural Pests, types of pests (agricultural, store grain, veterinary).  2.2 Major insect pests of agricultural importance ( Marks of identification, life cycle, nature of damage and control measures). | 07 |
| 5. | November 2022 | 2.3 Non insect pests: Rats, Crabs, Snails, and Squirrels  2.4 Pest control practices in brief and Concept of IPM in brief.  2.5 Plant protection appliances: Shoulder type Rotary duster, Knapsack sprayer, Cynogas Pump. | 07 |
| **Total** | | | **30** |

Satyaniketan’s

**Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur**

**Annual Teaching Planning 2022-2023**

**T.Y. B.Sc. Zoology** Semester V

**Subject Name -: ZO 356 - Parasitology**

**Teacher’s Name- Prof. Arote J. D**

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| **Sr. No.** | **Month** | **Topic** | **No. of Periods** |
|  | July 2022 | **--** |  |
|  | August 2022 | -- |  |
|  | September 2022 | 1. Introduction, Scope and Branches of Parasitology:  1.1. Definition: host, parasite, vector, commensalisms, mutualism and parasitism.  1.2. Branches of parasitology.  2. Types of Parasites and Hosts:  2.1 Ectoparasites.  2.2 Endoparasites and its subtypes.  2.3 Types of hosts | 05 |
|  | October 2022 | 3. Host - Parasite relationship:  3.1 Host specificity. 3.2 Types of host specificity  3.3 Effects of parasite on host.  4. Study of Parasitic Protists:  4.1 Entamoeba histolytica –  4.2 Plasmodium vivax - | 12 |
| 5. | November 2022 | 5. Study of Parasitic worms: 5.1 Ascaris lumbricoides - Study of Morphology, Life Cycle, Prevalence. 5.2 Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment. 5.3 Taenia solium (Tapeworm) - Study of Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment.  6. Study of Parasitic Arthropoda: Morphology, pathogenicity and control measures of | 13 |
| **Total** | | | **30** |

Satyaniketan’s

**Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur**

**Annual Teaching Planning 2022-2023**

**F.Y. B.Sc. Zoology** Semester II

**Subject Name -: ZO 122 – Cell Biology**

**Teacher’s Name- Prof. Arote J. D**

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| **Sr. No.** | **Month** | **Topic** | **No. of Periods** |
|  | February 2023 | **1. Introduction:**  1.1 Introduction cell biology 1.2 Cell as basic unit of life. 1.3 Importance of Cell Biology and its applications  **2. Overview of Cells**  Introduction to Prokaryotic and Eukaryotic cells.  **3 Techniques in Cell Biology:**  3.1 Introduction 3.2 Microscopy: Basic Principle, Simple, Compound and applications of Electron Microscope.  3.3 Stains and dyes: Types of Stain: Acidic, basic and neutral. Dye (Preparation and chemistry of dyes not expected) 3.4 Micrometry. | 08 |
|  | March 2023 | **4 Plasma Membrane:**  4.1Introduction 4.2 Structure of plasma membrane: Fluid mosaic model. 4.3Transport across membranes4.4 Other functions of Cell membrane in brief Protection, cell recognition, shape, storage, cell signalling. 4.5 Cell Junctions  **5 Nucleus**: Structure and function  5.1Introduction to Nucleus 5.2 Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleoplasm, Nucleolus 5.3 Chromatin: Eu-chromatin and Hetro-chromatin, nature and differences. 5.4 Functions of nucleus | 10 |
|  | April 2023 | 6. **Endomembrane System**  6.1 Introduction 6.2 Structure, location and Functions: Endoplasmic Reticulum, Golgi apparatus, Lysosomes and vacuoles.  7. **Mitochondria and Peroxisomes**  7.1 Introduction 7.2 Mitochondria: ultrastructure and function of mitochondrion. | 07 |
|  | May 2023 | 8. **Cell Division**  7.1 Introduction 7.2 Cell cycle (G1, S, G2, M phases), 7.3 Mitosis. 7.4 Meiosis. | 05 |
| **Total** | | | **30** |

Satyaniketan’s

**Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur**

**Annual Teaching Planning 2022-2023**

**S.Y. B.Sc. Zoology** Semester IV

**Subject Name -: ZO-242- Applied Zoology II**

**Teacher’s Name- Prof. Arote J. D**

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| **Sr. No.** | **Month** | **Topic** | **No. of Periods** |
|  | February 2023 | **1. Apiculture: 16**  1.1 An introduction to Apiculture, Systematic position, Study of habit, habitat and nesting behaviour of *Apisdorsata*, *Apisindica*, *Apis florae* and *Apismellifera*.  1.2 Life cycle, Colony organization and Division of labour.  1.3 Bee behaviour and communication (Round Dance and Wag-Tail Dance).  1.4 Bee keeping equipments : a) Bee box (Langstroth type),  b) Honey extractor, c) Smoker, d) Bee-veil, e) Gloves, f) Hive tool, g) Bee Brush, h) Queen excluder. | 08 |
|  | March 2023 | 1.5 Bee keeping and seasonal management  1.6 Bee products (composition and uses): 1.7 Diseases and enemies of Bees : **a)** Bee diseases **b)** Bee pests -. **c)** Bee predators **-** 1.8 Bee pollination and management of bee colonies for pollination. | 08 |
|  | April 2023 | **2. Fisheries : 14**  2.2 An introduction to fisheries and its types (in brief) : Freshwater, Marine fisheries, Brackish water fisheries.  2.3 Habit, habitat and culture methods of following freshwater forms : 03  **a)** Rohu, **b)** Catla **c)** Mrigal  2.3 Harvesting methods of following marine forms: | 08 |
|  | May 2023 | 2.4 Crafts and Gears in Indian Fishery:  **a)** Crafts – Catamaran, Machwa, Dinghi.  **b)** Gears – Gill net, Dol net, Rampani net, Cast net.  2.5 Fishery byproducts:  2.6Fish preservation technique: | 08 |
| **Total** | | | **30** |

Satyaniketan’s

**Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur**

**Annual Teaching Planning 2022-2023**

**T.Y. B.Sc. Zoology** Semester VI

**Subject Name -: ZO 362 - Animal Physiology**

**Teacher’s Name- Prof. Arote J. D**

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| **Sr. No.** | **Month** | **Topic** | **No. of Periods** |
|  | February 2023 | **1. Nutrition and digestion:**  1.1 Nutritional requirement & balanced diet.  1.2 Digestion and absorption of carbohydrates, proteins and lipids.  1.3 Vitamins - outline of fat soluble and water-soluble vitamins; Sources,  deficiency and diseases | 05 |
|  | March 2023 | **2. Respiration:**  2.1 Mechanism of respiration: Regulation of ventilation in lungs, exchange of gases at respiratory surface.2.2 Respiratory pigments in animals: Haemoglobin, Hemocyanin,Hemerythrin, Chlorocruorin.  2.3 Transport of gases : O2 and CO2 transport.  **3. Circulation:**  3.1 Blood: Definition and its constituents, functions of blood. 3.2 Heart: Structure of human heart, Pace maker, Cardiac Cycle. 3.3 Origin and conduction of heart beat. | 10 |
|  | April 2023 | |  |  | | --- | --- | | **4. Excretion:**  4.1 Structure of Uriniferous tubule.  4.2 Mechanism of urine formation.  4.3 Normal and abnormal constituents of urine, Elementary idea of dialysis. |  | | **5. Muscles:**  5.1 Structure of smooth, skeletal and cardiac muscles.  5.2 Mechanism of muscle contraction by Sliding filament theory. | | | 08 |
|  | May 2023 | **6. Reproduction and Endocrine Glands:**  6.1 Physiology of male reproduction, hormonal control of spermatogenesis.  6.2 Physiology of female reproduction, hormonal control of menstrual cycle. | 07 |
| **Total** | | | **30** |