Lesson plan of Zoology Department (2025-2026)

Odd semester

Subject: Biochemistry & Metabolism(P504)

Class: BSc (H)Zoology 5th semester

Faculty name: Shalini Yadav

**JULY**

Carbohydrates:Structures and properties of important mono-di- and polysaccharides.

**AUGUST**

Carbohydrate Metabolism, Glycolysis, Fermentation, Citric acid cycle, pentose phosphate pathway, Gluconeogenesis, Shuttle systems (Malate-aspartate shuttle, Glycerol 3-phosphate shuttle, and Cori cycle), Glycogen metabolism

Lipids: Structures, properties and functional significance of fatty acids, triglycerides and steroids.Lipid Metabolism , Biosynthesis and ß-oxidation of saturated fatty acids, Ketogenesis.

**SEPTEMBER**

Amino acids and Proteins, Structure and general properties of amino acids.Protein Metabolism, Catabolism of amino acids: Transamination, Deamination and Urea cycle, Fate of glucogenic and ketogenic amino acids with examples of serine and leucine respectively.Enzymes. Introduction, kinetics, mechanism of action, inhibition, allosteric enzymes.

**OCTOBER**

Intermediary metabolism,Inter-relationship of carbohydrates, lipid and protein metabolism.Oxidative Phosphorylation.Oxidative phosphorylation in mitochondria.

**NOVEMBER**

Respiratory chain, ATP synthase, Inhibitors and Uncouplers. Class test and revision.

Lesson plan of Zoology Department (2025-2026)

Odd semester

Subject: Organic Evolution(P502)

Class: BSc (H)Zoology 5th semester

Faculty name: Dr. Manisha sharma

**JULY 2025**

Concept of evolution, Origin of life

**AUGUST**

Evidences in favour of evolution, Theories of evolution viz. Lamarckism,

Weisman’s theory of continuity of germplasm, Neo- Lamarckism,

Darwinism and Modern synthetic theory of evolution

Sources of variability amongst population, mutations, Isolation, Natural

Selection. Test

**SEPTEMBER**

Hardy -Weinberg principle,

Micro and macro evolution, Structural and functional adaptations

Class test, Mimicry and protective colouration, test

**OCTOBER**

Mimicry and protective colouration, Speciation and its type

Zoo-Geographical distribution of animal species (Realms), Fossil-Formation, Kinds, Interpretation

Class Test

**NOVEMBER**

Age and significance of fossil, Evolution of man, Class test and Revision.

**B.SC. (HONS) ZOOLOGY**

**SEMESTER–V**

**PAPER-503 IMMUNOLOGY-I**

**Mrs Shweta Yadav**

**July- August**

**Unit I**

**Overview of Immune system**

Historical perspective of I mmunology,

Early theories of Immunology.

**Components of immune system**

Innate, Adaptive (cell mediated and humoral) – Passive: Artificial and Natural Immunity, Active: Artificial and Natural Immunity.

**Unit II**

**Cells and Organs of the Immune System**

Haematopoesis, role of haematpoietic factors

Cells of the immune system

**September**

Organs of the Immune system: Primary

Secondary lymphoid organs ,Lymphatic system.

**Unit III**

**Antigens**

Antigenicity and immunogenicity,

Immunogens, Adjuvants and Haptens,

**October**

Factors influencing immunogenecity, B and T-cell epitopes.

**Unit IV**

 Immunoglobulins- Structure and Functions, Basic structure, deducing antibody structure,

classes and function, Antigenic determinants on immunoglobulins, Antigen-antibody interactions

Polyclonal sera,

**November**

Monoclonal antibodies, Hybridoma technology

Revision and test

**B.SC. (HONS) ZOOLOGY**

**SEMESTER–V**

**PAPER-501 Genetics and genomics -I**

**Teacher : Aakanksha**

**July- August**

**Unit I**

**Introduction to Genetics**

Mendel’s work on transmission of traits, Genetic Variation, Molecular basis of Genetic Information.

**Mitosis and Meiosis**

Interrelation between the cell structure and the genetics function, Mitosis, Meiosis (explaining Mendel’s ratios).

**Mendelian Genetics and its Extension**

Principles of Inheritance, Chromosome theory of inheritance, Laws of Probability, Pedigree analysis, Incomplete and

codominance, Multiple alleles, Lethal alleles, Epistasis, Pleiotropy, Environmental effects on phenotypic expression,

sex linked inheritance.

**September**

**Unit II**

**Linkage, Crossing Over and Chromosomal Mapping**

Linkage and crossing over, Cytological basis of crossing over, Molecular mechanism of crossing over,

Recombination frequency as a measure of linkage intensity, two factor and three factor crosses, Interference and

coincidence, Somatic cell genetics – an alternative approach to gene mapping. Introduction to concept of Epigenetics.

**October**

**Unit III**

**Mutations**

Chromosomal Mutations: Deletion, Duplication, Inversion, Translocation, Aneuploidy and Polyploidy. Gene

mutations: Induced versus Spontaneous mutations, Back versus Suppressor mutations, Molecular basis of Mutations

in relation to UV light and chemical mutagens, Detection of mutations: CLB method, Attached X method, DNA

repair mechanisms.

**Sex Determination**

Chromosomal mechanisms, Environmental factors determining sex determination, Barr bodies, Dosage

compensation

**November**

**Unit IV**

**Extrachromosomal Inheritance**

Chloroplast mutation/Variegation in Four o’ clock plant and *Chlymodomonas,* Mitochondrial mutations in

*Neurospora* and yeast, Maternal effects, Infective heredity- Kappa particles in *Paramecium.*

**Quantitative Genetics**

Quantitative and multifactor inheritance, Transgressive variations, Heterosis.

Revision and test

**Lesson plan Zoology (2025- 26)**

**Odd semester (5th Sem)**

**Biostatistics**

**Teacher’s name: Sapna Tanwar**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| AUGUST | Measure of central tendency.Curve fitting. Correlation and regression. Test. |
| September | Measures of dispersion, skewness, kurtosisElementary probability and basic laws.test |
| October | Discrete and continuous random variable, mathematical expectation.Mean and variance of binomial, Poisson and normal distribution.Test. |
| November  | Sample mean and sampling variance.Hypothesis testing using standard normal variate.Test.Revision Test |

Odd semester (5th semester)

Fish and Fisheries

Teacher’s name: Dr. Kavita Saini

|  |
| --- |
| July and AugIntroduction to world fisheries: Production, utilization and demand. Fresh Water fishes of India: River system, reservoir, pond, tank fisheries; captive and culture fisheries, cold water fisheries. |
| SeptemberFishing crafts and gears. Fin fishes, Crustaceans, Molluscs and their culture.Assignment  |
| OctoberSeed production: Natural seed resources – its assessment, collection, Hatchery production. Nutrition: Sources of food (Natural, Artificial) and feed composition (Calorie and Chemical ingredients).Class test and Assignment  |
| NovemberField Culture: Ponds-running water, recycled water, cage, culture; poly culture. Culture technology: Biotechnology, gene manipulation and cryopreservation of gametes.Revision  |

Lesson plan B.Sc. Medical

Odd semester (5th semester)

Teacher’s name: Rakhee Chauhan

|  |
| --- |
| July and AugustBasic concepts of ecology: Definition, significance. Concepts of habitat and ecological niche Factors affecting environment: Abiotic factors (light-intensity, quality and duration), temperature, humidity, topography; edaphic factors; biotic factors |
| SeptemberEcosystem: Concept, components, properties and functions; Ecological energetics and energy flow-food chain, food web, trophic structure; ecological pyramids concept of productivity. Biogeochemical cycles: Concept, reservoir pool, gaseous cycles and sedimentary cycles. Population: Growth and regulation. Assignment  |
| OctoberOrigin of life. Concept and evidences of organic evolution. Theories of organic evolution. Concept of microevolution and concept of species.Class test and Assignment  |
| NovemberConcept of macro-and mega-evolution. Phylogeny of horse.Evolution of man.Revision  |

**Lesson plan of Zoology Department (2025-26) Odd semester (3rd Semester)**

**Subject- Pest Management (CC-A08)**

**Class - B.Sc Major in Zoology**

**Faculty Name- Naveeta Yadav**

|  |  |
| --- | --- |
| **Time Period** | **Topics covered** |
| **July** | Study of important insect pests of crops and vegetables:**Sugarcane**:(With their systematic position , habits and nature of damage caused.(a) Sugarcaneleaf-hopper(Pyrilla perpusilla)(b) SugarcaneWhitefly(Aleurolobus barodensis)(c) Sugarcanetopborer(Sciropophaga nivella)(d) Sugarcanerootborer (Emmalocera depresella)(e) Gurdaspurborer(Bissetia steniellus)LifecycleandcontrolofPyrilla perpusilla only.**Test** |
|
|
|
| **August**  | **Cotton**:(With their systematic position, habits and nature of damage caused.(a) Pinkbollworm(Pestinophora gossypfolla)(b) Redcottonbug(Dysdercus cingulatus)(c) Cottongreyweevil(Myllocerus undecimpustulatus)(d) CottonJassid(Amrasca devastans)Life cycle and control of Pectinophoregossypiella**Wheat**: Wheat stem borer (Sesamia inferens) with its systematic position, habits, nature of damage caused. Life cycle and control methods.**Paddy**:(With their systematic position, habits and nature of damage caused)(a) Gundhi bug(Leptocorisaacuta)(b) Ricegrasshopper(Hieroglyphusbanian)(c) Ricestemborer(Scirpophagaincertullus)(d) RiceHispa(Diceladispaarmigera)Life cycle and control of Loptocorisaacuta only**Assignment**  |
|
|
|
| **September**  | **Vegetables**:(Their systematic position, habits and nature of damage caused.(a) Aulacophorafaveicollis–The Red pumpkin beetle.(b) Dacuscucurbitas–The pumpkin fruit fly.(c) Tetranychustecarius–The vegetable mite.(d) Epilachna– The Hadda beetleLifecycle and control of Aulacophorafaveicollis**Storedgrains**:(Their systematic position, habits and nature of damage caused.(a) Pulsebeetle (Callosobruchusmaculatus)(b) Riceweevil (Sitophilusoryzae)(c) Wheatweevil (Trogodermagranarium)(d) RustRedFlourbeetles (Triboliumcastaneum)(e) Lessergrainborer (Rhizoperthadominica)(f) Grain&Flourmoth (Sitotrogacerealella)Life cycle and control of Trogodermagranarium)**Test** |
|
|
|
| **October**  | Important bird and rodent pests of agriculture & their management.Pest control: Biological control, its history, requirement and precautions and feasibility ofbiological agents for control.Chemical control: History, Categories of pesticides, important pesticides from each category to pests against which they can be used, insect repellants and attractants.**Assignment** |
|
|
|
| **November**  | Integrated pest managementRevision |

Lesson plan Zoology (2025- 26)

Odd semester

Major in Zoology (3rd Sem)

Biodiversity and Wildlife Management

Teacher’s name: Ambika Jindal

Time period Topics covered

August Concept of Bio-Diversity and Wild life, Levels of Biodiversity Pattern and

distribution of Wildlife in India, Wild life zones of India Techniques of

animal counts (Examples of Tiger count)

Test

September Conservation of biodiversity: in-situ and ex-situ Concept of Protected

Area Systems Important Protected Areas of India (Bio-sphere reserve,

National Park & Wildlife sanctuaries)

Test.

October Red Data Book and its uses; IUCN Categories of wildlife species Climate

change and loss of biodiversity

Test

November Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life

conflicts Wildlife Tourism; Biosphere Reserves concept and Indian

Biosphere Reserves; Location & Significance

Revision and test

**Lesson plan Zoology (2025- 26)**

**Odd semester**

**MDC in Zoology (3rd Sem)**

**BASICS OF PUBLIC HEALTH AND WATER BORNE DISEASES**

**Teacher’s name: Ambika Jindal**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| August | Introduction to Public Health, Definition, scope, concept, and importance of public health microbiology; Concept of health and disease; Common terms and definitions in water quality, aquatic resources of the world and sources of drinking water; Water, sanitation, and hygiene (WASH) – fact sheets, WHO guidelines and resolutions; common contaminants of drinking water and linkages to disease;Test |
| September | Water pollution (water quality properties, types of water pollution, point and non-point sources of water pollution); Types of contaminants influencing water quality; Water Treatment, Control of Water Borne Diseases. water-borne pathogens (types, sources, and transmission); microbial testing of Water; monitoring and surveillance of water qualityTest. |
| October | Water-Borne Diseases: Source of infection, transmission, symptoms, prevention and treatment/mitigation Bacterial infections- Cholera, Typhoid fever, E. coli infection, Campylobacteriosis, Dysentery, Typhoid fever. Viral infections: Rotavirus, Hepatitis A and E, Poliomyelitis, Polyomavirus infection. Test |
| November | Protozoal infections, Amoebiasis, Giardiasis. Parasitic worms: Fascioliasis, Hookworm infections; Vector-borne infections: Malaria, Dengue, Leishmaniasis, Japanese encephalitis, Lymphatic filariasis Detection Methods for water-borne pathogensRevision and test |

 **MIC Zoology 3rd semester**

 **Botany (hons.) 2025-26**

**Lesson plan**

**Introductory Human physiology**

 **Teacher’s name: Sapna Tanwar**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| August2025 | Physiology of Digestion: Physiology of digestion in the alimentary canal; Absorption ofcarbohydrates, proteins, lipids.Physiology of Respiration: Pulmonary ventilation, Respiratory volumes and capacities, Transport ofOxygen and carbon dioxide in blood, oxygen dissociation curve of hemoglobin, Bohr’s effect,Hamburger’s phenomenon (Chloride shift)Test |
| September2025  | Physiology of Circulation: Structure of Heart, Origin and conduction of the cardiac impulse, Cardiaccycle, electrocardiogram, cardiac output, Composition and functions of blood & lymphExcretion: ornithine cycle (Kreb’s– Henseleit cycle) for urea formation in liver. Urine formation,counter-current mechanism of urine concentration, osmoregulationTest |
| October 2025 | Neural Integration: Structure of neuron, Nature, origin and propagation of nerve impulse along withmedullated & non-medullated nerve fibre, conduction of nerve impulse across synapse.Chemical integration of Endocrinology:physiology of hypothalamus, pituitary, thyroid, parathyroid, adrenal, pancreas andgonads.Test |
| November 2025 | Physiology of reproduction: Spermatogenesis, oogenesis, Fertilization, Menstrual cycle,monozygotic and dizygotic twins. Parthenogenesis. Implantation and gestationTestRevision  |

 **Zoology major 3rd semester**

**Zoology (hons.) 2025-26**

**Lesson plan- r cell bio and genetics**

**Teacher’s name: Sanju Mohan**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| August2025 |  General structure of cell, Plasma membrane various mode of transport across membrane, active passive transport, endocytosis and exocytosis.Test |
| September2025  | Types and functions of Endoplasmic reticulum, Golgi complex structure ,Ribosomes types and role in protein synthesis, lysosomes structure and role.Mitochondria structure and functionCilia and flagellaUltra structure and function of nucleusTest |
| October 2025 | Mendel’s laws of inheritance, linkage and recombination, cell cycle,Sex determination and its mechanism, Sex linked inheritance, extra chromosomal and cytoplasmic inheritance.Test |
| November 2025 | Multiple allelism, human genetics, applied geneticsTestRevision  |

**Lesson plan Zoology (2025- 26)**

**Odd semester (3rd Sem)**

**Zoology lifesciences**

**(Cell and Molecular biology)**

**Teacher’s name: Sapna Yadav, Sanju Mohan and Bharti**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| August | Plasma Membrane, Endoplasmic reticulum, Golgi complex, NucleusTest |
| September | Ribosomes, Lysosomes, Mitochondria And CytoskeletonTest. |
| October | Cell division, Cell cycle, DNA replication, Transcription and TranslationTest |
| November | Basic immunology, B and T cells, Innate and Acquired immunity, MHC, antigen and antibody, cancerRevision and test |

**Lesson plan Zoology (2025- 26)**

**Odd semester ( Ist Sem)**

**Major in Zoology**

**(Elemental diversity of Non- chordates-I):CC1**

**Teache name: Sushila**

**Credit – 4(T+P)**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| July | Phylum: Protozoa General characters and classification upto order level, Biodiversity and economic importance  |
| August  | Type study of Plasmodium Parasitic protozoans: Life cycle,mode of infection and pathogenicity of Trypanosoma, Leishmania Test, Assignment  |
| September  | Phylum: Porifera General characters and classification upto order level, Biodiversity and economic importanceType study of Sycon, Canal system in sponges.Test , Assignment  |
| October  | Phylum: Coelenterata General characters and classification upto order level, Biodiversity and economic importance noType study of obelia, Coral and coral reefs.Polymorphism in siphonophores.Test , Assignment  |
| November  | Phylum: HelminthesGeneral characters and classification upto order level, Biodiversity and economic importance noType study of liver fluke: Fasciola hepatica.Helminths parasites: Brief account of life history, mode of infection and pathogenicity of Schistosoma,Ancylostoma,Trichinella,WuchereriaAnd OxyurisTest , Assignment  |

**Lesson plan Zoology (2025- 26)**

**Odd semester**

**Major in Zoology (1st Sem)**

**Fundamentals of Molecular biology**

**Teacher’s name: Sapna Yadav**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| August | Nucleic acids. Types of genetic material.DNA replication.Test |
| September | DNA repair and recombination.RNA synthesis and processing.Test. |
| October | PROTEIN Synthesis and processing.Test |
| November | Control of gene expression at transcription level and translation level.Revision and test |

**Lesson Plan**

**B.Sc Major in Zoology (1st Sem)**

**CC3: Elemental Diversity of Non-Chordates-II**

**Teacher Name: Dr Suman**

**July and August**

Phylum - Annelida: General characters and classification up to order level, Biodiversity and economic importance of Annelida, Type study – Pheretima (Earthworm), Metamerism in Annelida. Trochophore larva: Affinities, evolutionary significance

**September**

Phylum - Arthropoda: General characters and classification up to order level, Biodiversity and economic importance of insects, Type study – Periplaneta

Assignment

**October**

Phylum - Mollusca: General characters and classification up to order level, Biodiversity and economic importance. Type study – Pila Torsion and detorsion in gastropoda; Respiration and foot

Class Test and Assignment

**November**

Phylum - Echinodermata: General characters and classification up to order level, Biodiversity and economic importance . Type Study –Asteries (Sea Star), Echinoderm larvae, Aristotle's Lantern. 6Phylum – Hemichordata: Type study: Balanoglossus

**Lesson Plan**

**SEC-SKILL ENHANCEMENT COURSE (1st Sem)**

**Bird Watching Techniques**

**Teacher Name: Dr Suman**

**July and August**

Introduction to Bird watching, Characteristics of Birds with flight adaptations. Important field signs of bird watching

**September**

Zoological Names of Important birds Field characters of important birds, Sexual dimorphism in birds

Assignment

**October**

Important Indian Bird areas Important Bird areas of Haryana Resident & Migratory Birds of North India

Class Test and Assignment

**November**

Birds as bio-indicators. Birds in food chain and Agriculture Bird Migration

Revision

**Lesson plan zoology (hons.) 2025-26**

**PAPER: ENVIRONMENTAL STUDIES (Mandatory for UG Programs)**

**Max. Marks: 50, Theory: 35, Internal Assessment: 15, Credit: 2**

**Odd semester (1stsemester)**

**EVS (VAC)**

**Teacher’s name: Sanju mohan,Bharti ,Naveeta,Sapna Tanwar,Akansha and Shalini**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| August2025 | Basic concepts: Environment - definition and significance; habitat and ecological niche; biosphere; atmosphere; lithosphere and hydrosphere.Factors affecting environment: Abiotic factors – light, temperature, humidity, topography; Biotic factors – microorganisms, animals, plants and humans.Sources of energy: Renewable and non-renewable soucesTest |
| September2025  | Ecosystem: Definition, types and functions; energy flow – food chains, food webs, trophic structure; concept of productivity. Biogeochemical cycles: Hydrological, gaseous and sedimentary cycles. Biological invasion and its impact on environmentTest |
| October 2025 | Concept of population, population density, natality, mortality, carrying capacity, growth forms. Human population: National and international concerns, Indian efforts to control the growing population; Sustainable development.Test |
| November 2025 | Environmental pollution: Air pollution; Water pollution; Soil pollution; Noise pollution;Plastic pollution and Marine pollution.Solid waste management; Ozone depletion; Global warming and climate change.Revision Test |

**Lesson plan Zoology (2025- 26)**

**Odd semester**

**Minor in Zoology (1st Sem)**

**Introduction to Non-Chordates**

**Teacher’s name: Ambika Jindal**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| August | Phylum Protozoa: General characters and classification of Protozoa up to class level with their ecological and economic importance Phylum Porifera: General characters and classification of Porifera up to class level with their ecological and economic importanceTest |
| September | Phylum – Coelenterata: General characters and classification of Coelenterates up to class level with their ecological and economicimportance Helminths: General characters and classification of Helminthes up to class level with their ecological and economic importanceTest. |
| October | Phylum – Annelida: General characters and classification of Annelids up to class level with their ecological and economic importance Phylum – Arthropoda: General characters and classification of Arthropods up to class level with their ecological and economic importanceTest |
| November | Phylum - Mollusca: General characters and classification of Mollusca up to class level with their ecological and economicimportance Phylum – Enchinodermata: General characters and classification of Echinoderms up to class level with their ecological and economic importanceRevision and test |

**Lesson plan Zoology (2025- 26)**

**Odd semester (1st Sem)**

**Zoology life sciences**

**(Animal Diversity-I)**

**Teacher’s name: Shweta, Sushila and Aakanksha**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| August | Phylum protozoa: General characters and classification upto order level , Parasitic protozoansPhylum Porifera: General characters and classification upto order level . Biodiversity and economic importance. Canal system and spicules |
| September | Phylum coelenterata: General characters and classification upto order. CORALS AND CORAL REEFS. Polymorphism .Platyhelminthes and Aschelminthes |
| October | Annelida : General characters, classification , metamerism, type study of Pheretima.Arthropoda: Characters, classification, mouth parts and appendages and ecological role of insects  |
| November | Mollusca: general characters and classification, torsion and detorsion , respiration and foot.Echinodermata: general characters and classification, type study of Asterias.General characters of Hemichordata with examples.Revision and test |

**Lesson plan Zoology (2025- 26)**

**Odd semester (1st semester)**

**MDC Zoology (Exploring the world of animals-1)**

**Teacher’s name: Bharti Khurana**

|  |  |
| --- | --- |
| **Time period** | **Topics covered** |
| July | Zoology: Definition and scope, introduction to animal kingdom. |
| Aug, week 1 | Characters of animals. Non-chordates and invertebrates with examples |
| Aug, week 2 | Invertebrate phyla, introduction to basic characters of animal with special reference to the non-chordates |
| Aug, week 3 | Biodiversity: introduction and scope. |
| Aug, week 4 | General characters of Protozoa and Porifera |
| Sept, week 1 | Study of amoeba and sponges with special reference to its structure and economic importance. |
| Sept, week 2 | General characters of coelentrata and annelida; Ecological importance of corals |
| Sept, week 3 | Morphology of earthworm and its ecological role. |
| Sept, week 4 | Economic importance of leach.  |
| Oct, week 1 | General characters of Anthropoda and Mollusca |
| Oct, week 2 | Study of basic characters of insects and snails: Insects as pest |
| Oct, week 3 | Study of basic characters of Grasshopper |
| Oct, week 4 | Economic importance of Homey Bee |
| Nov, week 1 | Snails as pest in paddy fields |
| Nov, week 2 | General characters of Echinodermata: Economic importance of Star Fish |
| Nov, week 3 | Study of basic characters of star fish with reference to its role in ecosystem |
| Nov, week 4 | Revision |

**Odd semester**

**Subject: Natural Hazarads and Disaster Management**

**Class: MA-Geography 3rd semester**

**Faculty name: Dr. Manisha sharma**

**JULY 2025**

Introduction to Natural and Manmade Disasters; Floods, flood hazards, urbanization and flooding,

**AUGUST**

Flood hydrographs, Drought, Landslides; Coastal hazards – tropical cyclone, coastal erosion, sea level changes, coastal zone management; Earthquakes - Seismic waves, quake resistant buildings; Tsunamis; Volcanoes; Wild fires; Oil spills; Urban hazards and disasters.

TEST

**SEPTEMBER**

Pre-Disaster Management activities; Hazard and vulnerability analysis; capability assessment; emergency/contingency planning and post-disaster management activities; Development planning, types of plans, MBO, SWOT analysis.

**OCTOBER**

Role of GPS, GIS and Remote Sensing in disaster management - Landslides, Volcanoes, Tsunami, Cyclones, Urban and Forest fires, Landslides; Decision-making models and processes; Hazard monitoring, tracking and modelling; Early warning systems; Indian space programme, future satellites for disaster management; Case studies.

TEST

**NOVEMBER**

India Disaster Resource Network; Organization and structure for Emergency Management; Principles and Practice of Disaster Relief and Recovery; Disaster management policy; Role of legislations in Disaster Management, Disaster Management Act 2005 and amendments, National Green Tribunal, Environment Protection Act, 1986, Explosive Substances Act, 1908, Atomic Energy Act, 1962, Local Administration and disaster risk reduction; Relief and Rehabilitation.

**Lesson plan of Zoology Department (2025-2026)**

**Odd semester**

**Subject: Pollution and Climate change**

**Class: MA-Geography 1st semester**

**Faculty name: Shalini Yadav**

**AUGUST**

Sources, classification and properties of air pollutants, behaviour and fate of air pollutants, effects of air pollution on human health & materials, sampling and analysis of air pollutants, SOx, NOx, CO, Ozone, hydrocarbons and particulate matter, Air quality standards. Noise pollution: Definition, sources and effects; noise-monitoring-sound level meter.

TEST

**SEPTEMBER**

Sources, consequences, characteristics of domestic, industrial and agricultural wastes, their effects on water bodies; thermal pollution. Marine pollution-a general account; water quality standards. Soil pollution from use of fertilizers, pesticides, heavy metals, waste disposal, industrial effluents and surfactants. Detrimental effects of soil pollutants, Remedial measures for soil pollution.

**OCTOBER**

Greenhouse effect, trends, radiative forcing, warming potential of gases. CO2 fertilization effect on plants; potential impacts of global warming – polar ice caps and melting of glaciers, sea level increase, weather extreme, ecosystems, human health, coral leaf bleaching.

TEST

**NOVEMBER**