Teaching Plan
Academic Session: 2025-26
Department of Zoology
Jagannath Barooah University, Jorhat

Name of the Teacher: Dr. Luk Bahadur Chetry
Semester: Odd

Semester	Allotted Course Details	Method of Teaching	Teaching Material	Unit	Topics	Class Hours	Suggested Resources
Sem I (VAC)	EVEVA-011: Environmental Education	Lecture, Discussion, Class Notes, Field visit	Textbook, Videos	3: Environmental degradation and its impacts	Human population growth and its impacts on environment; land use change, deforestation, habitat fragmentation, land degradation, soil erosion and desertification, Environmental hazards-A brief account of air, water, soil and noise pollutions-causes, effect and control measures. Concept of climate change - Green-house effect, global warming, ozone layer depletion, acid rains and their impacts on human and agriculture.	6	Erach Barucha. *Text book of Environmental Studies for Undergraduate courses* (Prepared for UGC). Dani HM. *Environmental Education.*
				4: Conservation of Environment	Concept of sustainability and sustainable development with judicious use of land, water and forest resources; afforestation. Conservation of nature and natural resources, man-animal conflict, Environment Laws: Environment Protection Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols, Environmental Movements: Bishnois of Rajasthan,	6	

					Chipko, Silent valley.		
Sem III (SEC)	ZOOSK-031: Aquarium Fishkeeping	Lecture using PPT, Discussion, Class notes Field visit	Textbook, Reference Book, Diagram, Models, Videos	1: Introduction to Aquarium Fish Keeping	The potential scope of Aquarium Fish Industry as a Cottage Industry, Exotic and Endemic species of Aquarium Fishes.	6	Jhingran VG. *Fish and Fisheries of India.* Gupta SK, Gupta PC. *General and applied ichthyology (fish and fisheries.*
				2: Biology of Aquarium Fishes	Common characters and sexual dimorphism of Fresh water aquarium fishes such as Puntius, Channa, *Botia, Mystus, Clarius, Wallago, Notopterus, Tetradon, Nandus* sp.; Fish diseases, Fish compatibility, Aquarium fish behaviour.	6	
				5: Maintenance of Aquarium	General Aquarium maintenance-budget for setting up an Aquarium Fish Farm	6	
Sem III (Major)	ZOOMJ-033: Comparative Anatomy of Vertebrates	Lecture using PPT, Discussion, Class notes	Textbook, Reference Book, Videos	4: Respiratory System	Skin, gills, lungs and air sacs; Accessory respiratory organs	6	Kardong KV. *Vertebrates' Comparative Anatomy, Function and Evolution*
				6: Urino-genital System	Succession of kidney, Evolution of urino-genital ducts, Types of mammalian uteri.	6	
Sem V (Major)	ZOOMJ-051: Molecular Biology	Lecture using PPT, Discussion, Class notes	Textbook, Reference Book, Videos	4: Translation	Genetic code and its properties, Wobble Hypothesis; Process of protein synthesis in prokaryotes: Ribosome structure and assembly in prokaryotes, aminoacyl tRNA synthetases and charging of tRNA; Proteins involved in initiation, elongation and termination of polypeptide chain; Inhibitors of protein synthesis; Difference between prokaryotic and eukaryotic translation.	6	Cooper GM, Robert E, Hausman RE. *The Cell: A Molecular Approach* Karp G. *Cell and Molecular Biology: Concepts and Experiments*
				5: Post Transcriptional Modifications and Processing of	Structure of mRNA; Split genes: concept of introns and exons, basic concept of RNA splicing, and RNA editing, Processing of tRNA.	6	

				Eukaryotic RNA			
Sem V (Major)	ZOOMJ-054: Biotechnology and Bioinformatics	Lecture using PPT, Discussion, Class notes	Textbook, Reference Book, Videos	1: Introduction	Concept and scope of biotechnology	6	Brown TA. *Molecular Biology LabFax II: Gene Cloning and DNA Analysis*. David W Mount. *Bioinformatics Sequence and Genome Analysis*.
				3: Genetically Modified Organisms	Production of transgenic animals: Nuclear Transplantation, Retroviral Method, DNA microinjection, Applications of transgenic animals. Production of transgenic plants: Agrobacterium mediated transformation. Applications of transgenic plants.	6	
				5: Basic Concept of Sequencing Alignment	Concept of sequence alignment: pairwise and multiple sequence alignments, Local and global alignment; Scoring Matrices (PAM, BLOSUM), Methods of Alignment (Dot matrix, Dynamic Programming), BLAST and FASTA; Similarity, identity and homology of sequences. Phylogenetic analysis: Basic concept, Steps in evaluating and constructing phylogenetic tree.	6	
Sem V (Minor)	ZOOMI-051: Biotechnology and Bioinformatics	Lecture using PPT, Discussion, Class notes	Textbook, Reference Book, Videos	1: Introduction	Concept and scope of biotechnology	6	Brown TA. *Molecular Biology LabFax II: Gene Cloning and DNA Analysis*. David W Mount. *Bioinformatics Sequence and Genome Analysis*. -
				3: Genetically Modified Organisms	Production of transgenic animals: Nuclear Transplantation, Retroviral Method, DNA microinjection, Applications of transgenic animals. Production of transgenic plants: Agrobacterium mediated transformation. Applications of transgenic plants.	6	
				5: Basic Concept of Sequencing Alignment	Concept of sequence alignment: pairwise and multiple sequence alignments, Local and global alignment; Scoring Matrices (PAM, BLOSUM), Methods of Alignment (Dot matrix,	6	

					Dynamic Programming), BLAST and FASTA; Similarity, identity and homology of sequences. Phylogenetic analysis: Basic concept, Steps in evaluating and constructing phylogenetic tree.		