CURRICULUM PLAN (Aug. -Dec., 2024) Dr. MAYANGLAMBAM ROJINA DEVI

Subject- Concepts of Ecology (DSC 3; Theory) Class- B. Sc. (Hons.) Zoology Sem. I

Contents	Allocation of lectures	Month-wise schedule to be followed	Tutorial/ Assignments / Presentations	
Unit I: Introduction to Ecology (03 Hours) Autecology and Synecology, Laws of limiting factors, Study of physical factors: Temperature and Light	3 lectures	August- September	 Overall introduction to this paper PPT with relevant pictures and videos 	
Unit II: Population (07 Hours) Unitary and Modular populations; Unique and group attributes of population: density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion; Exponential and logistic growth, equations and patterns, <i>r</i> and <i>k</i> strategies; Intraspecific population regulation: density-dependent and independent factors.	7 lectures	September- October	 2 minutes recap of previous class PPT with relevant pictures 	
Unit III: Species Interactions (06 Hours) Types of species interactions, Interspecific competition: Lotka-Volterra model of competition, Gause's Principle with laboratory and field examples, Niche concept; Predation: Lotka-Volterra equations, Functional and numerical responses, predator defence mechanisms, Resource partitioning	6 lectures	October	 Discussion through PPT Surprise quiz Distribution of assignments 	
Unit IV: Community (05 Hours) Community characteristics: species richness, dominance, diversity, abundance, guilds, ecotone and edge effect; Ecological succession with examples and types	5 lectures	November	LectureClass test	
Unit V: Ecosystem (6 Hours) Types of Ecosystems: Terrestrial ecosystem, vertical stratification in tropical forest; Food chain: detritus and grazing food chains, linear and Y-shaped food chains, food web; Energy flow through the ecosystem; Ecological	6 lectures	November	• 2 minutes recap of previous class	

pyramids and Ecological efficiencies;			•	PPT with
Biogeochemical cycle- nitrogen cycle.				relevant
				pictures
Unit VI: Applied Ecology (03 Hours)	3 lectures	December	•	2 minutes
Ecology in wildlife conservation and				recap on
management, Protected areas: National				provious
Parks, Biosphere reserves and Sanctuaries;				previous
Restoration ecology, Principles of				class
Environmental impact assessment			•	Lecture
			•	REVISION

Subject- Concepts of Ecology (DSC 3; Practical) Class- B. Sc. (H) Zoology Sem I

Date	Practical
06/09/2024	 Study of an aquatic ecosystem: Phytoplankton and zooplankton. Measurement of temperature, turbidity/penetration of light, determination of pH
13/09/2024	Determination of Dissolved oxygen content (Winkler's method) from different water samples
20/09/2024	Determination of Free carbon dioxide and alkalinity from different water samples
27/09/2024	Study of life tables and plotting of survivorship curves of different types from hypothetical/ real data
04/10/2024	Determination of Chemical oxygen demand from different water samples
11/10/2024	Determination of population density in a natural or a hypothetical community by quadrate method and calculation of Shannon-Weiner diversity index
18/10/2024	Study of ten endemic animals of India with slides/pictures/videos.
25/10/2024	A visit to a National Park/Biodiversity Park/Wildlife Sanctuary
November-	REVISION and MOCK PRACTICAL TEST
December	