Pre-requisites	Basic knowledge on Taxonomy, Biodiversity, Environment and Ecology	
for the Course:		
Course	1. To develop the concepts of ecology and biodiversity	
Objectives:	2. To outline ecosystem functioning	
	3. To identify the reasons for decline of biodiversity	
	4. To sensitize the learners of the issues arising from unsustain	able
	development with respect to the global scenario and method	ds to tackle
	the problems.	
Content:	Module 1	
	Introduction: Historical overview of ecology, ecology and	
	evolution, Ecological structure: Levels of organization, species	15 hours
	abundance and composition, Biodiversity	
	Ecological interactions: Positive interactions, Negative	
	interactions, Study of behavior and behavioral ecology	
	Ecological energetics: Food chains, Food webs and Trophic	
	levels, Primary production, Nutrient cycles	
	Module 2	
	Population ecology: population parameters and demographic	
	techniques, Population growth and regulation, Population	15 hours
	studies and applications	
	Community ecology: Community nature and parameters,	
	community changes and ecological succession, Community	
	organization	
	Distribution and abundance: Biogeography: analysis of	
	geographic distributions, reasons of existence and co-	
	existence of organisms in niches	
	Management of threatened species: threat to species, In-situ	
	conservation, Ex-situ conservation	
	Module 3	
	Human ecology: Introduction and impacts, Human population	15 hours
	growth and food requirements, sustainable development	
	Ecology of change: oil spills, plastic and biodiversity, impacts	
	of climate change, Biodiversity Act 2004 (BMC, PBR).	

	Applied ecology: optimum yield problem, biological control,	
	ecotoxicology and pollution management, restoration ecology.	
Pedagogy:	Lectures/ tutorials/ online teaching mode/self-study	
References/	1. J.V. Andel and J. Aronson, Restoration Ecology: The New Frontier, 2nd	
Readings:	ed. Blackwell Publishing Ltd., 2012.	
	2. A.J. Baker, ed., Molecular Ecology, In Molecular Methods in Ecology.	
	Blackwell Publishing, 2000.	
	3. J.L. Chapman, and M.J. Reiss, Ecology: Principles and Applications.	
	Cambridge University Press, 1999.	
	4. A.R. Conklin, Field Sampling: Principles and Practices in Environmental	
	Analysis, CRC Press, 2004.	
	5. T.J. Fahey, and A.K. Knapp, Principles and Standards for Measuring	
	Primary Production. UK: Oxford University Press, 2007.	
	6. W.E. Grant, and T.M. Swannack, Ecological Modeling. Blackwell, 2008.	
	7. E.P. Odum and G.W. Barrett, Basic Ecology: Fundamentals of Ecology,	
	5th ed. Oxford and IBH Publishing Co. Pvt, 2004.	
	8. M.R. Perrow, and A.J. Davy, Handbook of Ecological Restoration, Vol. 2.	
	Restoration in Practice, Cambridge University Press, 2002.	
	9. W.J. Sutherland, Ecological Census techniques a handbook. Cambridge	
	University Press, 2006.	
	10. D.M. Wilkinson, Fundamental Processes in Ecology: An Earth system	
	Approach. UK: Oxford University Press, 2007.	
	11. H. Heatwole, and J. Taylor, Ecology of Reptiles. Cocos (Keeling) Islands:	
	Surrey Beatty and Sons, 1987.	
	12. R.A. Seigel, Snakes: Ecology and Behavior. UK: McGraw-Hill, 1993.	
Course	The learner will	
Outcomes:	1. Outline the importance of ecological interactions and energetics.	
	2. Prioritize the requirements for biodiversity conservation.	
	3. Plan for long term conservation of ecosystems.	
	4. Formulate strategies for pollution management and restoration.	