Course title: Wildlife Conservation and Management				
Course code: NRE 151	**No. of credits:** 3	**L-T-P:** 21-08-32		**Learning hours:** 45
Pre-requisite course code and title (if any): NRE 121 Ecology, NRE 123 Biodiversity assessment and Conservation				
Department: Energy and Environment				
Course coordinator:			**Course instructor:** Dr Sudipta Chatterjee	
Contact details: s.chatterjee@terisas.ac.in				
Course type: Elective			**Course offered in:** Semester 3	

Course Description

This course teaches the essential elements, concepts and skills related to wildlife conservation and management. This includes implementing habitat management practices; identifying wildlife conflicts; and participation in personal and community leadership development activities and planning. The perspectives of science and management will be elucidated in the context of historical, current and future strategies designed to conserve the diversity of life. The course work will be guided by work on scientific papers and field experience.

Course objectives

Course content

Module	Topic	L	T	P
1.	**Introduction and History of Wildlife Conservation** Perspectives and philosophical perspective; Cultural foundation; Protected Area Network (PAN) **Values and Ethics in Wildlife Conservation** Definitions and (Instrumental; Intrinsic; Ecocentrism; Religious traditions and conservation), Ethics in conservation.	3		
2.	**Wildlife–Habitat Ecology** Measuring wildlife habitat, availability, quality, animals signs; monitoring changes; corridors *Journal article to work on*.	2	2	
3.	**Wildlife Behavior** Introduction (Group living, selfishness and altruism); evolutionarily stable strategies; concept of optimality in decision making in animals **Practical:**Methods of behavioural observation	2		2
4.	**Population Estimation and Modelling** Estimating abundance and density; Modelling (stochastic and deterministic) of populations and occupancy. Bayesian models in abundance estimation (Spatial and Non Spatial).Population viability analysis **Practical:** RAMAS/Vortex.	5		2
5.	**Conservation Genetics and Wildlife Forensics** Re fresh: Genetic variation; pedigree management; molecular markers, genotyping; wildlife forensics - overview *Journal article to work on*.	2	2	
6.	**Management & Planning** ReFresh: Captive breeding and propagation, rehabilitation, gene banks, *ex-situ* and *in-situ* linkages. *Journal article to work on*.	2	2	
7.	**Human Wildlife Conflict (HWC)**	2	2	

	Introduction - Lethal (human, livestock, crop, disease); non-lethal; cost and schemes. *Journal article to work on*.			
8.	**Conservation Economics and policy** Values of wildlife; Market incentive; Ecotourism and conservation; PA (direct, indirect, opportunities); Refresh: conservation acts in India; Enforcement of legislation in India	3		
9.	**Excursion** **(Wildlife Institute of India, Ranthombore Tiger Reserve/ Dudhwa Tiger Reserve)** Wildlife Population parameters and census methods for various species(Line Transects and DISTANCE; Mark-recapture Data and MARK); Radio telemetry, GIS demonstration			28 (3 days)
	Total	**21**	**8**	**32**

Evaluation criteria
- 2 Minor tests: 20% each
- Presentation: 20%
- Major test: 40%

Learning outcomes
1. Historical aspects of Wildlife conservation in India and India's conservation present day conservation priorities
2. Ability to undertake situation analysis for conservation .
3. Applications of emerging tools and techniques in wildlife conservation.

Pedagogical approach

Materials
Required text
1. Caughley G. and Sinclair A.R.E. (Eds.) (1994) *Wildlife Ecology and Management*, Blackwell Science, Cambridge.
2. Hunter M.L., Gibbs J.B. and Sterling E.J. (2008) *Problem-Solving in Conservation Biology and Wildlife Management: Exercises for Class*, Field and Laboratory, Blackwell Publishing.
3. Williams B.K., Nichols J.D. and Conroy M.J. (2002) *Analysis and Management of Animal Populations*, Academic Press, San Diego, California, USA.
4. Woodroffe R., Thirgood S. and Rabinowitz A. (2005) *People and Wildlife, Conflict or Co-existence*? (Conservation Biology), Cambridge University.

Suggested readings
1. Chape S., Spalding M.D. and Jenkins M.D. (Eds.) (2008) *The World's Protected Areas: Status, Values and Prospects in the Twenty-first Century*, University of California Press, Berkeley.
2. Crow J.F. (1986) *Basic Concepts in Population, Quantitative and Evolutionary Genetics*, W.H. Freeman and Company, New York.
3. Hanski I.A. and Gilpin M.E. (editors) (1997) *Metapopulation Biology: Ecology, Genetics and Evolution,* Academic Press, San Diego, California, USA.
4. Nichols J.D. and Karanth K.U. (2002) *Statistical Concepts; Assessing Spatial Distribution*, in Karanth K.U. and Nichols J.D. (editors) Monitoring Tigers and their Prey, Centre for Wildlife Studies, Bangalore, India.
5. Primack R.B. (2008) *A Primer of Conservation Biology*, 4th Edition, Sinauer Associates, Inc.
6. Rangarajan M. (2001) *India's Wildlife History*, Permanent Black, New Delhi, India.
7. Rodgers W.A. and Panwar H.S. (1988) *Planning Wildlife Protected Area Network in India*, 2 vols,

Project FO: IND/82/003, FAO, Dehra Dun. Case studies Websites Journals 1. Journal of Wildlife Management 2. Journal of Zoology
Additional information (if any)
Student responsibilities Attendance, feedback, discipline, guest faculty etc