KU3VACZOO101: WILDLIFE CONSERVATION BIOLOGY

Semester	Course Type	Course Level	Course Code		Credits	Total Hours
III	VAC	100	KU3VACZOO101		3	45
Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture/Tutorial	Practical		CE	ESE	Total	
3	-		25	50	75	1.5

Course Description

Conservation biology is a developing and complex field. This course will give students an overview to recognize and articulate the key aspects of biodiversity, the causes of biodiversity loss, and the role of conservation biology in preserving biodiversity. This discipline includes the scientific methods employed, the biological principles behind conservation techniques and strategies as well as the complexities involved in attempts to influence and implement conservation-oriented policies.

Course Prerequisite:

Course Outcomes:

	Expected Outcome	**Learning Domains**
CO1	Identify and explain important threats to biological diversity as well as the variety of approaches to protecting biodiversity	An
CO2	Form and articulate opinions on complex issues in conservation biology.	An
CO3	To apply knowledge in solving problems human wildlife conflicts and wildlife monitoring	E
CO4	Evaluate different conservation methods to find suitable one for a particular habitat.	E
CO5	Differentiate between different IUCN categories	An

****Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)***

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	2	1	3
CO2	2	2	3	1	3
CO3	2	2	3	2	3
CO4	1	2	3	2	3
CO5	1	1	2	1	3

COURSE CONTENTS

Module I: Biodiversity- Significance and Challenges (9 hours)

Unit I:

1.1 Types of biodiversity

1.1.1Genetic diversity

1.1.2 Species diversity

1.1.3 Ecosystem diversity.

1.2 Values of biodiversity-Intrinsic, consumptive, productive use, social, ethical, aesthetic and option values. Utilitarian values of biodiversity.

Unit II:

1.2 Threats to Biodiversity- habitat loss and fragmentation, extinction, pollution, global climate change, overexploitation, poaching of wildlife, invasive species.

Unit III:

1.4 Human and wildlife conflicts

1.4.1 Human-wildlife Coexistence

1.4.2 Wildlife Crimes

1.5 Eco-tourism

1.6 Sustainable Utilization of Biodiversity Resources.

Module II: Biodiversity Conservation (9 hours)

Unit I:

2.1 Conservation movements

2.1.1 International

2.1.2 National.

Unit II:

2.2 Reproductive parameters in conservation (breeding habitats, mating systems, inbreeding depression, genetic bottlenecks, genetic constraints), Captive breeding.

Unit III:

2.3 IUCN categories of species

2.4 Red Data Book and related documentation

2.5 Threatened plants and animals of India.

Module III: Conservation Strategies (9 hours)

Unit I:

3.1 Strategies for conservation

3.1.1 In situ Conservation -Wildlife Sanctuaries, National parks, Biosphere Reserves, Biodiversity hotspot in India

3.1.2 Ex-situ conservation –Botanical gardens, bio-parks, Aquaria and Gene banks

Unit II:

3.2 Demonstration and applicability of basic equipment needed for wildlife studies (Compass, Range finder, GPS, Camera Traps).

3.3 Animal Footprints (Pugmark & hoof mark), Animal Droppings (Scat, Dung, Pellet), Other animal signs, Antlers, Nests of birds;

Unit III:

3.4 Animal trail survey or trail monitoring.

Module IV: Conservation Policies, Organizations and Institutions (9 hours)

Unit I:

4.1Wildlife Protection Act 1972

4.2 IUCN, CMFRI

Unit II:

4.3 Chipko movement and Silent Valley movement,

4.4 Wetland conventions, Ramsar sites.

Unit III:

4.5 Role of NGOs in conservation.

Teacher Specific Module	**9 hours**
Directions: **20 percent of the content can be modified by the course teacher** *Suggestions:* **Wildlife Photography** 1. Basic Principles; Fundamentals of camera lenses and accessories 2. DSLR camera functions and features. 3. Focusing & its different methods. 4. Techniques for photographing mammals, birds, insects, reptiles, and amphibians.	

Compulsory Readings

1. Caughley, G., and Sinclair, A.R.E. (1994). Wildlife Ecology and Management. Blackwell Science.
2. Shekhar, S. Kolipaka, (2014). A Field Guide to Tracks & Signs of Indian Wildlife. 1-385pp.
3. Sinclair, A.R. E., John M. Frysell, and Graeme Caughley (2006). Wildlife Ecology, Conservation, and Management, Blackwell Publishing, 1-463, pp.
4. Berwick S. H. and Saharia, V. B. (1995). Development of International principles of Wildlife Research and Management (Asian and American approaches). Oxford University Press, Delhi, Bombay, Madras. 1-481. pp.
5. Vivek Menon, (2014). Indian mammals, A Field Guide; Hachetta Book Publishing India Pvt. Ltd.4th and 5th Floor Corporate centre, Plot No. 94, Sector 44, Gurgoan, 122001, India.
6. Hunter M. L., Gibbs, J. B. and Sterling, E. J. (2008). Problem-Solving Conservation Biology and Wildlife Management: Exercise for class, Field and laboratory, Blackwell Publishing.
7. Southerland, W. J. (2000). The conservation handbook: Research management and Policy. Blackwell Sciences.
8. Bookhout, T. A. (1996). Research and management techniques for wildlife and habitats, 5th edition. The Wildlife Society, Allen Press.
9. Woodroffe, R., Thirgood, S. and Rabinowitz, A. (2005). People and Wildlife, Conflict or Coexistence? Cambridge University.

Suggested Readings

1. Dhruva Narayana VV 1993. Soil and water conservation research in India, ICAR, New Delhi.
2. Kathiresan, 1986. Essentials of Forest Management, Natraj Publishers, Dehra Dun.
3. Pushpangathan et al. 1997. Conservation and Ecological Economics of biodiversity. Longman.
4. Rajesh, G. 1989. Fundamentals of Wildlife Management. Justice Home, Allahabad.
5. Honey M. 1998. Ecotourism and Sustainable Development. Iceland Press.
6. Luck M and Kirstges T. 2002. Global Ecotourism Policies and Case Studies. Channel View Publ.
7. Claussen E, Cochran VA and Davis DP. 2001. Climate Change: Science, Strategies and Solutions. Pew Centre on Global Climate Change, USA.

Assessment Rubrics:

Evaluation Type		**Marks**
• End Semester Evaluation		50
• Continuous Evaluation		25
Continuous Evaluation		
Theory	Method of Assessment	Marks
a)	Test paper I	5
b)	Test paper II	5
c)	Viva-Voce	5
d)	Assignment	5
e)	Seminar	5
		Total – 25 marks