University of Kerala

Discipline	**ZOOLOGY**				
Course Code	**UK1DSCZOO103**				
Course Title	**Wildlife Biology and Conservation**				
Type of Course	**DSC**				
Semester	I				
Academic Level	100 – 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3	-	2	5
Pre-requisites	Pass in class XII				
Course Summary	This course provides a foundational understanding of wildlife biology and conservation principles. It covers various aspects of wildlife biology including wildlife habitats, threats to wildlife, conservation strategies and wildlife monitoring and research. Through lectures, discussions, practicals and fieldwork, students will gain insights into the diversity of wildlife species, their habitats, threats, and conservation efforts.				

Detailed Syllabus

Module	Unit	Content	45 hrs
I	**Introduction to Wildlife Biology**		**3**
	1.1	Definition of Wildlife, Values of Wildlife	2
	1.2	Need of Wildlife Conservation	1
II	**Wildlife Habitats**		**8**
	2.1	Wildlife habitats - Forest Habitat (eg: Shola forest of Western Ghat); Desert Habitat (eg: Thar Desert); Aquatic habitat (eg: Vembanad lake); Wetland habitat (eg: Sunderbans delta); Mangrove habitat (eg: Pichavaram mangrove forest). Mention Biodiversity Hotspots in India.	6
	2.2	Ecological significance of Keystone species, Edge species and Umbrella species	2
III	**Wildlife Conservation Strategies**		**16**
	3.1	*In-situ* conservation -National Parks, Biosphere reserves, Wildlife Sanctuaries, Mangrove	7

		forests with examples in India and Kerala (Brief description)	
	3.2	*Ex-situ* conservation- Zoological Parks with examples in India and Kerala, Captive breeding (Brief description with examples)	4
	3.3	IUCN Red Data Book	1
	3.4	Project Tiger, Project Elephant, Project Cheetah, Project Rhino and Project Crocodile (brief account)	2
	3.5	Wildlife conservation organizations, agencies and schemes - WWF, Nagar Van Yojana (NVY), BNHS, Wildlife Conservation Society(WCS), IUCN, ASEAN-WEN	1
	3.6	Indian Wildlife (Protection) Act, 1972; Biological Diversity Act of 2002 (brief account)	1
IV	**Threats to Wildlife**		**9**
	4.1	Major threats to Wildlife: Habitat loss and fragmentation, Over exploitation, Climate change, Poaching, Pollution	4
	4.2	Invasive species. (Eg.-Apple Snail (*Pomacea canaliculata*)	2
	4.3	Man-animal conflict and its management	3
V	**Wildlife Monitoring and Research**		**9**
	5.1	Wildlife monitoring (Brief account) –- Direct count (Block count, Transect methods, Point counts, Visual encounter survey, Waterhole survey), Indirect count (Call count, track and signs, pellet count, pugmark, camera trap, M-stripe).	7
	5.2	Wildlife Research Institutes- KFRI, KSBB, IIFM, Salim Ali Centre for Ornithology and Natural History (SACON).	2

References:

1. Begon, M., Townsend, C. R., & Harper, J. L. (2006). Ecology: From Individuals to Ecosystems (4th ed.). Wiley-Blackwell.
2. Groom, M. J., Meffe, G. K., & Carroll, C. R. (2006). Principles of Conservation Biology (3rd ed.). Sinauer Associates.
3. Hunter M.L., Gibbs, J.B. and Sterling, E.J. (2008). Problem-Solving in Conservation
4. Pullin, A. S., & Knight, T. M. (Eds.). (2009). Conservation Biology (1st ed.). Cambridge University Press.
5. Soule, M. E., & Orians, G. H. (Eds.). (2001). Conservation Biology: Research Priorities for the Next Decade. Island Press.
6. Sutherland, W. J. (Ed.). (2001). Conservation Science and Action. Blackwell Science.
7. Wildlife Protection Act (1972). Natraj Publ.Co. Dehradun
8. Woodroffe R., Thirgood, S. and Rabinowitz, A. (2005). People and Wildlife, Conflict or Co-existence? Cambridge University.

Web Resources:

1. IUCN Red List of Threatened Species: https://www.iucnredlist.org/
2. National Geographic Society - Wildlife Conservation: https://www.nationalgeographic.org/topics/wildlife-conservation.
3. Wildlife Conservation Society: https://www.wcs.org/

Practicum (30hrs)

Sl. No	Contents
1.	Field study/Visit to Zoological Park/Sanctuary/ Natural History Museum/attend Nature Camp and submit a detailed report with photographs.
2.	Biodiversity Register preparation of the college campus or any other area.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the key concepts and terminology in wildlife conservation.	U, R	PSO-1
CO-2	Understand major threats to wildlife populations and habitats, such as habitat loss, climate change, and poaching.	R, U	PSO-2, PSO-3
CO-3	Propose management strategies to mitigate human-wildlife conflicts in different contexts.	U, Ap	PS0-1,
CO- 4	Evaluate the effectiveness of conservation policies and practices in different regions.	An	PSO-2
CO-5	Apply field identification skills to classify and document wildlife species encountered during fieldwork. Analyse habitat data to identify potential threats to wildlife populations, such as habitat fragmentation or degradation	U, Ap, An	PSO-1,PSO-5, PSO-6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Name of the Course: Wildlife Biology and Conservation

Credits: 3:0:1 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PS O	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the key concepts and terminology in wildlife conservation.	PO1 PSO-1	U,R	F,C	L	
CO-2	Recall the major threats to wildlife populations and habitats, such as habitat loss, climate change, and poaching.	PO5 PO8 PSO-2 PSO-3	R, U	F,C	L	
CO-3	Propose management strategies to mitigate human-wildlife conflicts in different contexts.	PO8 PS0-1	U, Ap	F,C	L	
CO- 4	Evaluate the effectiveness of conservation policies and practices in different regions.	PO8 PSO-2	An	F,C	L	
CO-5	Apply field identification skills to classify and document wildlife species encountered during fieldwork. Analyse habitat data to identify potential threats to wildlife populations, such as habitat fragmentation or degradation	PO6 PO8 PSO1 PSO5 PSO-6	U, Ap, An	F,C,P		P

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs

	PSO 1	PSO 2	PSO 3	PSO 4	PS O5	PSO 6	PS O7	PSO 8	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	3	-	-	-	-	-	-	-	1	-	-	-		-	-	-
CO 2	3	2	-	-	-	-	-	-	-	-	-	-	1	-	-	2
CO 3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
CO 4	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	2
CO 5	2	-	-	-	3	3	-	-	-	-	-	-	-	2		2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

Assignment /Seminar topics

- Human-Wildlife Conflict
- Ecosystem Services
- Climate Change and Wildlife
- Protected Areas Management
- Conservation Education and Outreach

Mapping of COs to Assessment Rubrics

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓		✓
CO 4		✓		✓
CO 5		✓		✓