

**ADD ON COURSE 2023-24
ADVANCED ANIMAL BEHAVIOR**

Duration: 30 Hours

Course code: ZO-AB

Course Description:

This course explores the intricate behaviours exhibited by animals, focusing on the mechanisms, evolution, and ecological significance of these behaviours. Students will gain an in-depth understanding of how animals interact with their environment and each other, considering both innate and learned behaviours. The course will cover various aspects of animal behaviour, including communication, foraging, mating systems, social structures, and cognitive abilities, with an emphasis on the adaptive significance of these behaviours in natural setting

Course Outcomes:

By the end of this course, students will be able to:

1. Analyse and interpret the underlying mechanisms that drive various animal behaviours.
2. Understand the evolutionary significance of behaviour in different ecological contexts.
3. Critically evaluate scientific literature on animal behaviour.
4. Apply theoretical knowledge to practical observations and experiments in ethology.
5. Discuss the role of animal behaviour in conservation and wildlife management.

Unit 1: Introduction to Animal Behaviour

7 hours

Overview of Animal Behaviour: Definition and scope of animal behaviour, Historical background and key figures in ethology.

Mechanisms of Behaviour: Neural and hormonal control of behaviour, Genetic and environmental influences.

Proximate vs. Ultimate Causes: Tinbergen's four questions, Examples of proximate and ultimate causes in animal behaviour.

Unit 2: Behavioural Ecology and Evolution

8 hours

Adaptive Significance of Behaviour: Natural selection and behavioural adaptations, Fitness and optimality in behaviour.

Foraging Behaviour: Optimal foraging theory, Predation and anti-predator strategies.

Mating Systems: Types of mating systems (monogamy, polygamy, etc.).

Unit 3: Social Behaviour and Communication

8 hours

Social Structures and Group Living: Benefits and costs of group living, social hierarchies and dominance.

Communication in Animals: Types of communication (visual, auditory, chemical, etc.), Signalling theory and honest signals.

Altruism and Cooperation: Kin selection and inclusive fitness, Reciprocal altruism and cooperative breeding.

Unit 4: Cognition, Learning, and Human-Animal Interactions

7 HOURS

Animal Cognition and Intelligence: Problem-solving and tool use, Memory, learning, and decision-making.

Learning and Behavioural Plasticity: Types of learning (habituation, classical conditioning, operant conditioning), Cognitive maps and spatial memory.

Human Impact on Animal Behaviour: Domestication and behavioural changes, Conservation behaviour and wildlife management.

Reference Books:

1. "An Introduction to Behavioural Ecology" by Nicholas B. Davies, John R. Krebs, and Stuart A. West.
2. "Animal Behaviour: Mechanisms, Ecology, Evolution" by Lee Alan Dugatkin

