



जम्मू केन्द्रीय विश्वविद्यालय
Central University of Jammu

राया-सुचानी (बगला), जिला: सांबा-181143, जम्मू (जम्मू और कश्मीर), भारत
Rahya-Suchani (Bagla), District- Samba, 181143, Jammu (Jammu and Kashmir), India

Course Title: Ethology

Credit: 4 (L-4, T-0, P-0)

Course code:

Contact Hrs/Week: 4 Hrs

Course Outcomes

Students acquire new knowledge and ideas about the mechanisms of instinct and behavior, understand how animals learn and analyze problems, and understand the importance of evolution in animal behavior.

Course Learning Outcomes (CLO): The students will be able to:

1. Acquire comprehensive understanding of instinctual mechanisms and behavioral patterns in animals.
2. Analyze diverse learning processes employed by animals to adapt and solve challenges.
3. Recognize the pivotal role of evolution in shaping animal behavior.
4. Develop critical thinking skills to assess and interpret animal behavior.
5. Apply acquired knowledge to address real-world challenges in animal behavior and ecology.

Unit I

Origin and history of Ethology; Karl von Frisch, Ivan Pavlov, Konrad Lorenz, Niko Tinbergen; Proximate and ultimate causes of behavior; tools, techniques, and methods used in studying animal behavior.

Unit II

Stereotyped behaviors (Orientation, Reflexes); Individual behavioral patterns; Instinct versus Learned behavior; Associative learning, Classical and Operant conditioning, Habituation, Imprinting.

Unit III

Sexual Behaviour: Asymmetry of sex, Sexual dimorphism, Mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Courtship behavior; Parental care, sexual conflict in parental care.

Unit IV

Social Behaviour: Concept of Society, Communication and the senses; Altruism, Inclusive fitness, Hamilton's rule; Insects' society; Foraging in honey bee and advantages of the waggle dance.

Unit V

Characteristics of biological rhythms; Types of rhythms; Circadian rhythms; Tidal rhythms and Lunar rhythms; Concept of synchronization and masking; Photic and nonphotic zeitgebers; Photoperiod and regulation of seasonal reproduction of vertebrates.

Suggested Readings:

1. Alcock J. (2013). Animal Behaviour. Sinauer Associate Inc., USA.

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2. Peter Marler and Jay S. Rosenblatt. (2022). Ethology: The Mechanisms and Evolution of Behavior.
3. Manning, A. and Dawkins, M. S. (2012). An Introduction to Animal Behaviour. Cambridge, University Press, UK.
4. McFarland D. (1982). Animal Behaviour. Pitman Publishing Limited, London, UK.
5. Dunlap J. C, Loros J. J, DeCoursey P. J. (2004) Chronobiology Biological Timekeeping. Sinauer Associates, Inc. Publishers, Sunderland, MA, USA
6. Vinod Kumar. (2002). Biological Rhythms. Narosa Publishing House, Delhi/ Springer-Verlag, Germany

Course Title: Ethology Lab.

Credit: 2 (L-0, T-0, P-4)

Course code:

Contact Hrs/Week: 4 Hrs

Lab component

1. To study nests and nesting behavior of the birds and social insects.
2. To study the behavioral responses of an insect to dry and humid conditions.
3. To study geotaxis behavior in earthworms/ phototaxis behavior in insect larvae from videos/films.
4. Study of courtship behavior in birds and insects from videos/films.
5. Study and actogram construction of locomotor activity of pet animals.
6. Visit Wildlife Sanctuary/Biodiversity Park/Zoological Park to study and record the behavioral activities of animals and prepare a short report.