

Course Objectives:

The objectives of the course are:-

1. To educate scholars about the relationship of commerce with domestic animals, their products, by-products and associated farming practices
2. To teach the importance of human and domestic animal diseases and their vital relation to the economy
3. To provide knowledge about internal and external parasites and their effects on domestic animals and their farming practices
4. To familiarize with the value of studying various general practices, principles and techniques in farming and rearing of animals in sericulture (silk worms), apiculture (honey bees), aquaculture (fisheries, pearl culture, prawns and oysters), poultry (domestic fowl and ostriches) and cattle husbandry
5. To study the economics and principles of stored grained pests, pesticides and integrated pest management

Course Learning Outcomes:

Upon successful completion of the course, the student will be able to:

1. **ACQUIRE** basic knowledge of Commerce and Economics with relation to Zoology
2. **UNDERSTAND** the Economic relationship of Animals with Humans
3. **SOLVE** problems related to animal husbandry and pest management by applying theoretical knowledge with practical efficacy
4. **ANALYZE** and enhance Animal husbandry techniques by using different Entrepreneurship skills
5. **EVALUATE** problems using practical knowledge in Zoology
6. **DEMONSTRATE** the Economy based interactions of Man and Animals

Course Outline:

- Basic concepts in Economic Zoology.
- Parasitic protozoans and human disease. Economic importance of protozoa.
- Vectors of human and domestic animals.
- Ecto- and Endo-parasites of fish, poultry, cattle and Man (Crustacea, Helminthes and Arachnida).
- Pests of pulse crops. Pests of oil seed crops. Stored grain pests. Pests of cotton. Pests of vegetables. Pests of fruits. Pests of tea.
- Apiculture, and Sericulture, Lac insect culture and Pearl culture
- Aquaculture and Fisheries (Edible Fresh water, Pond and Marine fish, Prawns, Pearl oysters). Economic importance of fishes.
- Bird farming (Poultry, Quail, Turkey, Ostrich and Pigeon).

Practical:

1. To study the prepared slides of various types of ecto- and endo-parasites.
2. To observe and study Museum specimens of vertebrate and invertebrate pests of important crops and stored grains in Pakistan.
3. To visit Honey Bee farm. Write a report on their observations.
4. Visit to Sericulture farm in a near by locality and write report on their observations.
5. Study visit to fish Hatchery, Nursery ponds, Stocking ponds, Commercial fish breeding farms and report writing.
6. Identification of important species of Fish and their natural animal.
7. Visit to any bird farm and write a report on their observations.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos/films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation,

and class participation/attendance.

Assessments and Examination

Text and Reference Books:

1. Economic Zoology. Ravindranathan, K. R. 2003. 1st ed. Dominant Publishers and Distributors. New Delhi. India
2. Principles of Wildlife Management. Bailey, J. A. 1986. John Wiley and Sons Inc. USA.
3. Wildlife ecology and management. Robinson, W. L. and Bolen, E. G. 1984. McMillan Publishing Company. Cambridge, UK.
4. A Primer of Conservation of Biology. Primack R. B. 2000. 2nd ed. Sinauer Associates Inc. USA.
5. Animal biodiversity of Pakistan. Mirza, Z. B. 1998. 1st ed: Printopack, Rawalpindi. Pakistan.
6. Ahmad, R. and Muzaffar, N., 1987. Rearing of Silkworm. Misc. Pub. Pak. Agric. Res. Council, pp. 53.
7. Akhtar, M. and Muzaffar, N., 2008. Introduction to Apiculture, Department of Zoology, Punjab University Press, 36 pp.
8. Anon, 1986. The Hive and the Honeybee. Dadant & Sons. Illinois, USA, pp. 740.
9. Anon, 1999. FAO Bulletins on Sericulture Nos. 1 & 2. FAO Office, Rome, Italy.
10. Blackiston, H., 2001. Beekeeping for Dummies. Wiley Publishing, Inc. Indiana, USA, pp. 303.
11. Shukla, G.S. and Upadhyay, V.B., 1997. Economic Zoology, 3rd Ed. Rastogi Publications, Meerut, India, pp. 369.