Course Code: ZOO- 431 **Course Title: Helminthology**
Number of Credits: 2
Effective from AY: 2020 -21

Prerequisite for the Course:	Basic working knowledge of animal parasites, their morphology and biology.	
Objectives:	This course will help the learner to understand the subject of parasitology, host-parasitic interaction, various Helminthes, i.e Nematodes, Trematodes and Cestodes along with their entire biology and human immune responses. This course also aids in developing knowledge about helminthes of veterinary importance.	
Content	**Module 1** Introduction to Helminthology: General organization and Classification of Platyhelminthes and Aschelminthes; Functional anatomy of Reproductive system of Nematodes, Trematodes, Cestodes Intramolluscan stages and their effect on molluscan hosts, Effect on foot, haepatopancreas, Reproductive system and general metabolism. 2. Various types of Cercaria. 3. Different types of larvae in cestodes and their pathogencity. 4. Holdfast organs with its adaptations in cestodes. Basic concept and overview - Parasite relationship, Parasitic adaptations, interrelationships between host and parasite. Host Parasitic interactions in health and diseases. Signs and symptoms of parasitic diseases. Immune response and self-defense mechanisms, immune evasion and biochemical adaptations of parasites. Helminths of veterinary importance. **Module 2:** Life cycle, mode of infection, signs and symptoms, diagnosis, molecular biology, drug resistance, treatment, preventive measures and control of each of the following: **Nematodes:** Intestinal (*Ascaris lumbricoids, Trichinella spiralis, Ancylostoma duodenale, Necator americanus*), Blood and tissue nematodes (*Wuchereria bancrofti, Dracunculus medinensis*). **Trematodes:** Liver fluke (*Fasciolla hepatica*), Intestinal Fluke (*Fasciolopsis buski*), Lung flukes (*Paragonimus westermani*), Blood flukes (Schistosomes); **Cestodes**: (*Taenia solium, Dipylidium caninum*), **Extra- Intestinal larval Cestodes** (*Echinococcus spp)*.	06 hrs 06 hrs 03 hrs 03 hrs 03 hrs
Pedagogy:	Lectures/Tutorials/Videos/Assignments/Group discussion/Self-study.	

Learning Outcome:	1. Learner will have sufficient knowledge on parasitology. 2. Will understand host-parasitic interaction. 3. Will realize various helminths and their biology. 4. Develop concept in understanding parasites and impact on lives. 5. Highlights the parasites of veterinary importance.
References /Reading	1. Bogitsh BJ (1990), Human Parasitology, Academic press, New York. 2. Rathnaswamy GK (1986), A Hand book of Medical Entomology and Elementary Parasitology, S.Vishwanath Pvt.Ltd., India. 3. Roberts L and Janovy J (1977), Foundations of Parasitology, McGraw-Hill Publishers, New York, USA. 4. Anderson RM and May RM (1985), Helminth infections of humans: mathematical models, population dynamics and control. Adv Parasitol.:1-101. 5. Cox FEG (1993), Modern Parasitology: A Textbook of Parasitology. 6. Chatterjee KD (1967), Parasitology: Protozoology & Helminthology. 7. Garcia LS, Bruckner DA (1997), Diagnostic medical Parasitology.