

Course Objectives:

The objectives of the course are:-

1. To impart knowledge on various trematodes, cestodes and nematodes affecting human and animals.
2. To understand basic principles of host parasite interaction.
3. To familiarize students with morphological criteria to differentiate the most common helminthes.
4. To improve their diagnostic capability by explaining basic and advanced diagnostic exercises using a compound microscope

Course Learning Outcomes:

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

1. **Attain** the basic knowledge of helminthes and principles of host-parasite interaction
2. **Comprehend** the concepts of etiology, biology and pathogenesis of helminthes and their relationship with hosts
3. **Explain** the complications related to the pathogenesis of the helminthes and successfully treating these infections.
4. **Diagnose** the helminthic infections by applications of basic and modern techniques
5. **Assess** the problems associated with helminthes infections on the basis of signs and symptoms.
6. **Demonstrate** helminthic infection affecting livestock, its morphology, life cycle, epidemiology, pathogenesis, treatment and control strategies.

Course Contents:

Introduction to the phylum platyhelminthes. Trematoda, Aspidohothria. Trematoda, Form, Function, Life cycle and Classification of digeneans. Digenians, strigeiformes. Schistosoma haematobium, S. japonicum, S. mansoni (Schistosomiasis); Digeneans Echinostomiformes: Fasciola hepatica, F. gigantica, Paramphistomum cervi, Megalodiscus temperatus. Digeneans, Plagiorchiformes and opisthorchiformes: Paragonimus westermani, Clonorchis sinensis, Heterophyesheterophyes, Prosthogonimus macrochis. Monogenea; Polystomum integraruum. Form, function, classification, life cycle. Cestoidea, form function, life cycle and classification of the tapeworms. Cyclophyllidae: Taenia solium, Taeniarhynchus saginata, T. pissiformis (Taeniasis), Taenia multiceps, Echinococcus granulosus, E. multilocularis, E. vogeli, Hymenolepis nana, H. diminuta, Raillietina species, Diphyllidium caninum, Moniezia species, Mesocestoides species. Phylum Nematoda, Form, Function and Classification. Nematodes, Trichurida and Dioctophymatida, enoplean parasites (Trichuris trichiura), Capillaria hepatica, Anatrchosoma ocularis, Dioctophyme renale, Nematodes, Rhabdilitida; Strongyloides stercoralis, Nematodes, Strongylida, bursate rhabolitidians, Bunostomum, Necator americanus, Ancylostoma duodenale, Synagamus trachea, Haemonchus contortus, Trichostrongylus species, Ostertagia species, Prostrongylus rufescens. Nematodes, Ascaridida, intestinal large round worms; Ascaris lumbricoides, Toxocara canis, Lagochilasascaris minor, Heterakis gallinarum, Ascaridia galli. Nematodes, oxyrurida, the pinworms; Enterobius vermicularis. Nematodes, Spirurida, a

potpoorri, Gnathostoma doloresi. Nematodes, Filarioidea; the filarial worms, Wuchereria bancrofti, Brugia malayi, Loa loa, Mansonella perstans, M. ozzardi, Onchocerca volvulus, Dirofilaria immitis. Nematodes, camallanina, the Guinea worms and others; Dracunculus mediensis. Phylum Acanthocephala, Thorny headed worms. Forms, function and classifications; Macrorhynchus hirudinaceus. Helminth Zoonoses (Trematode, Cestodes and nematode zoonoses).

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

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks

Books Recommended:

1. PRACTICAL EXERCISE IN PARASITOLOGY, 2001. Hatton, D.W., Behinke, M. and Marshal, I. Cambridge University Press, BSP.
2. VETERINARY PARASITOLOGY, 2000. Urquhart, G.M., Duncan, J.L., Qunn, A.M. and Jenniry, F.W. Longman Scientific and Technology, U.K.
3. PARASITIC DIAGNOSIS, 1999. Mayate, S. and Akhtar, M. UGC Govt. of Pakistan.
4. FOUNDATIONS OF PARASITOLOGY, 2000. 5th ed. Robert, L.S. and Janovy, J.Jr. W.C.B. Company, U.K.
5. INTRODUCTION TO ANIMAL PARASITOLOGY, 1994. Smyth, J.D. Cambridge Univ. Press.

UZO-492 Helminthology (Lab)

Cr. (1)

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Course Contents:

Methods for collection, transportation, fixation and preservation of flukes, tapeworms and round worms. Methods for collection and examination of faeces, urine and sputum for the presence of eggs/larvae of various helminthes. Methods for examination and staining of blood film for helminthes. Identification of important members of class Trematoda, Cestoda, Nematoda and Acanthocephala. Practical demonstration of helminthes at slaughter houses.

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