

DISCIPLINE SPECIFIC ELECTIVES (DSE-8):
Parasitology Zoo-DSE-8

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course	Department offering the course
		Lecture	Tutorial	Practical/ Practice			
Parasitology Zoo-DSE- 8	04	03	Nil	01	Passed Class XII with Biology/ Biotechnology	Basic understanding of parasitic animals	Zoology

Learning Objectives

The learning objectives of this course are as follows:

- To enable the students to see, appreciate and understand the diversity of parasites
- to learn about Parasitology that will enable students to diagnose parasites correctly, understand their life cycle and control them effectively and use some of them as bio control agents
- to acquire understanding of study of life cycles of parasites, that can help in defying the stigmas and religious taboos for many societies making free many of the people from superstition and ill health.
- to make the students aware about the possible scope of the subject which includes research and applied aspects including entrepreneurial skill

Learning Outcomes

By studying this course, students will be able to:

- better understand the variation amongst parasites, parasitic invasion in animals; applicable to medical and agriculture aspects
- Identify the stages of the life cycles of parasites and their respective infective stages. develop ecological model, on the base knowledge of population dynamics of parasites.
 - comprehend the different methods adopted by parasites to combat with the host immune system.
 - develop skills and realize significance of diagnosis of parasitic attack and treatment of patient or host.

- analyse and interpret the case studies to highlight innovative researches, serendipities towards the advancement and enrichment of knowledge in the field of Parasitology.

SYLLABUS OF DSE- 8

UNIT- 1: Introduction to Parasitology 3 hrs

Brief introduction of Parasitism, Parasite, Parasitoid and Vectors; Host parasite relationship

UNIT- 2: Parasitic Protists 10 hrs

Study of Morphology, Life Cycle, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment of *Entamoeba histolytica*, *Trypanosoma gambiense* and *Plasmodium vivax*.

UNIT- 3: Parasitic Platyhelminthes 10 hrs

Study of Morphology, Life Cycle, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment of *Fasciolopsis buski*, *Schistosoma haematobium* and *Taenia solium*

UNIT- 4: Parasitic Nematodes 10 hrs

Study of Morphology, Life Cycle, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment of *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Wuchereria bancrofti* and *Trichinella spiralis*.

UNIT- 5: Parasitic Arthropoda 8 hrs

Biology, importance and control of ticks, mites, *Pediculus humanus* (Head and Body louse), *Xenopsylla cheopis* and *Cimex lectularius*

UNIT- 6: Parasitic Vertebrates 4 hrs

A brief account of parasitic vertebrates; Cookicutter Shark, Hood Mockingbird and Vampire bat.

Practical (30 hrs)

(Laboratory periods: 15 classes of 2 hours each)

1. Study of life stages of *Entamoeba histolytica*, *Trypanosoma gambiense*, and *Plasmodium vivax* through permanent slides/micro photographs.
2. Study of adult and life stages of *Fasciolopsis buski*, *Schistosoma haematobium* and *Taenia solium* through permanent slides/microphotographs.
3. Study of adult and life stages of *Ascaris lumbricoides*, *Ancylostoma duodenale* and *Wuchereria bancrofti* through permanent slides/microphotographs.
4. Study of *Pediculus humanus* and *Xenopsylla cheopis* and *Cimex lectularius* through permanent slides/ photographs

5. Study of monogenea from the gills of fresh/marine fish [Gills can be procured from fish market as by-product of the industry]
6. Submission of a brief report on parasites (anyone phylum).
7. Visit to rural area/hospital near rural area/NCDC/NIMR/NICD to study the natural history and diagnostics of parasites.

Essential/recommended readings:

1. Parija, S. C. (2013) Textbook of Medical Parasitology, Protozoology & Helminthology (Text and colour Atlas), IV Edition, All India Publishers & Distributors, New Delhi.
2. Ichhpujani, R.L. and Bhatia, R. (2009) Medical Parasitology. III Edition, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi
3. Ahmed, N., Dawson, M., Smith, C. and Wood, Ed. (2007) Biology of Disease. Taylor and Francis Group.

Suggested readings:

1. Chatterjee, K. D. (2009). Parasitology: Protozoology and Helminthology. XIII Edition, CBS Publishers & Distributors (P) Ltd.
2. Arora, D. R and Arora, B. (2001) Medical Parasitology. II Edition. CBS Publications and Distributors
3. Noble, E.R. and Noble, G.A. (1989) Parasitology: The Biology of Animal Parasites. VI Edition, Lea and Febiger

NOTE: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.