

# Lesson Plan

Department of Zoology, Basirhat College

Session- 2021-2022..... July-December

**General**

**Semester- 1<sup>st</sup> SEM**

**Lesson Plan for Course: Animal Diversity...Code:ZOOGCOR01/ ZOOHGECOR01 .... Credit: 4....**

Course coordinator:...**UDAY HOSSAIN**...

Course Outcome :

- i) CO1: Understand the general characteristics of Protists, Parazoa, and Metazoan phyla from protozoa to mammalia.
- ii) CO2: Can classify organisms upto class for invertebrates and upto orders for vertebrates.
- iii) CO3: Critically analyse the organisation, special characteristics, and life cycle traits of some selected animals from phylum porifera to nemathelminthes.
- iv) CO4: Can identify organisms of the above mentioned taxa by inspecting through microscope or naked eye.
- v) CO5: Can appreciate the diversity of animal kingdom and its importance for sustenance of life on earth.

## Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
<b>OCT</b>	<b>Unit-1 Kingdom Protista</b>	<b>Uday Hossain</b>		
	General characters and classification of Subkingdom Protozoa up to Phylum		2	Theoretical, PPT presentation, Google meet, animation from YouTube
	Locomotory Organelles and locomotion in Protozoa		1	Theoretical, PPT presentation, Google meet
	<b>Unit-2 Phylum Porifera</b>	<b>Uday Hossain</b>		
	General characters and classification up to classes; Canal System in <i>Sycon</i>		2	Theoretical, PPT presentation, Google meet
	<b>Unit-3 Phylum Cnidaria</b>	<b>Uday Hossain</b>		
	General characters and classification up to classes; Polymorphism in Hydrozoa		2	Theoretical, PPT presentation, Google meet
	Polymorphism in Hydrozoa		1	Theoretical, PPT presentation, Google meet
<b>Nov</b>	<b>Unit-4 Phylum Platyhelminthes</b>	<b>Uday Hossain</b>		

	General characters and classification up to classes;		2	Theoretical, PPT presentation, Google meet, animation from YouTube
	Life history of <i>Taenia solium</i>		1	Theoretical, PPT presentation, Google meet, animation from YouTube
	<b>Unit-5 Phylum Nematoda</b>	<b>Uday Hossain</b>		
	General characters and classification up to classes;		2	Theoretical, PPT presentation, Google meet
	Life history of <i>Ascaris lumbricoides</i> and its parasitic adaptations		1	Theoretical, PPT presentation, Google meet, notes in Google classroom
	<b>Unit-6 Phylum Annelida</b>	<b>Uday Hossain</b>		
	General characters and classification up to classes; Nephridia in Annelida		2	Theoretical, PPT presentation, Google meet
	Nephridia in Annelida		1	Theoretical, PPT presentation, Google meet
	<b>Unit 7 Phylum Arthropoda</b>	<b>Uday Hossain</b>		
	General characters and classification up to classes; Vision in insect, Metamorphosis in Insects		2	Theoretical, PPT presentation, Google meet
	Vision in insect, Metamorphosis in Insects		1	Theoretical, PPT presentation, Google meet
<b>Dec</b>	<b>Unit-8 Phylum Mollusca</b>	<b>Uday Hossain</b>		
	General characters and classification up to classes;	<b>3</b>	2	Theoretical, PPT presentation, Google meet, notes in Google classroom, animation from YouTube
	Respiration in <i>Pila</i>		1	Theoretical, PPT presentation, Google meet, notes in Google classroom, animation from YouTube
	<b>Unit-9 Phylum Echinodermata</b>	<b>Uday Hossian</b>		
	General characters and classification up to classes;	<b>4</b>	2	Theoretical, PPT presentation, Google meet

	Water-vascular system in <i>Asterias</i>		1	Theoretical, PPT presentation, Google meet
	Mid-Term Internal Exam			Online
	<b>Unit-10 Protochordates</b>	<b>Uday Hossian</b>		
	General features; Feeding in <i>Branchiostoma</i>		2	Theoretical, PPT presentation, Google meet, notes in Google classroom
	<b>Unit-11 Agnatha</b>	<b>Uday Hossian</b>		Online
	General features and classification up to classes		2	Theoretical, PPT presentation, Google meet, notes in Google classroom
	<b>Unit-12 Pisces</b>	<b>Uday Hossian</b>		
	General features and Classification up to Subclasses		2	Theoretical, PPT presentation, Google meet, notes in Google classroom
	Osmoregulation in Fishes		1	Theoretical, PPT presentation, Google meet
	<b>Unit-13 Amphibia</b>	<b>Uday Hossian</b>		
	General features and Classification up to living orders (Duellman & Trueb, 1986);		2	Theoretical, PPT presentation, Google meet, notes in Google classroom
	Metamorphosis in Toad		1	Theoretical, PPT presentation, Google meet
			Total- 36 hours	

## Resources :

1. Books: Barnes, R. D. & Ruppert, E. E., (1994). Invertebrate Zoology. 6thEd. Brooks Cole, Animal zoology B.Sc course (Bengali; Santra publication; Dev and Giri).
2. Other resources : Youtube animation links, Wikipedia, some ebooks

\*Remarks will specify

- The nature of the class-topic (viz. Theoretical, Practical, and Tutorial).
- Methodology of teaching (whether using ICT, engaging students in group discussion, quiz etc. etc.)
- Different modes of assessment. (Please check UGC evaluation reforms)

## Semester- 3<sup>rd</sup> SEM

**Lesson Plan for Course: Insect, Vectors and Diseases.....Code: ZOOGCOR03T.....Credit: 4.....**

Course coordinator: **Chinmoy Ghosh**

Course Outcome:

- ✓ CO1: To gain Knowledge about various insects and their characteristics.
- ✓ CO2: To understand mechanism of transmission of various diseases causing parasite via insects.
- ✓ CO3: It helps to improve awareness among students regarding disease transmitting insects and how to prevent spread and transmission of disease.

### Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
SEP	<b>Unit 1: Introduction to Insects</b>	Chinmoy Ghosh		
	General Features of Insects		1	Theoretical, Powerpoint
	Morphological features, Head – Eyes		1	Theoretical, Powerpoint,
	Types of antennae,		1	Theoretical, Powerpoint,
	Mouth parts with respect to feeding habit		2	Theoretical, Powerpoint, suggestive question in google classroom
	<b>Unit 2: Concept of Vectors</b>	Chinmoy Ghosh		
	Brief introduction to Vectors (mechanical and biological),		1	Theoretical, Powerpoint
	Reservoirs, Host-vector relationship		2	Theoretical, Powerpoint
	Adaptations as vectors		1	Theoretical, Powerpoint
	Host specificity		1	Theoretical, Powerpoint, suggestive question in google classroom
	<b>Class Test</b>		1	QUIZ in Google classroom
	<b>Unit 3: Insects as Vectors</b>	Chinmoy Ghosh		
	Detailed features of insect orders as vectors – Diptera		2	Theoretical, Powerpoint
	Detailed features of insect orders as vectors – Siphonoptera,		1	Theoretical, Powerpoint
	Detailed features of insect orders as vectors – Siphunculata,		1	Theoretical, Powerpoint
	Detailed features of insect orders as vectors – Hemiptera		2	Theoretical, Powerpoint, suggestive question in google classroom
OCT	<b>Unit 4: Dipteran as Disease Vectors</b>	Chinmoy Ghosh		
	Study of important Dipteran vectors – Mosquitoes, Sand fly, Houseflies		2	Theoretical, Powerpoint

	Study of mosquito-borne diseases – Malaria, Dengue, Chikungunya, Viral encephalitis, Filariasis Control of mosquitoes		2	Theoretical, Powerpoint, suggestive question in google classroom
	<b>Unit-5 Siphonaptera as Disease Vectors</b>	Chinmoy Ghosh		
	Fleas as important insect vectors		1	Theoretical, Powerpoint
	Host-specificity		1	Theoretical, Powerpoint
	Study of Flea-borne diseases – Plague, Typhus fever; Control of fleas		1	Theoretical, Powerpoint, suggestive question in google classroom
	<b>Unit-5 Siphonaptera as Disease Vectors</b>	Chinmoy Ghosh		
	Study of Flea-borne diseases – Plague, Typhus fever; Control of fleas		2	Theoretical, Powerpoint
	<b>Unit-6 Siphunculata as Disease Vectors</b>			
	Human louse (Head, Body and Pubic louse) as important insect vectors		1	Theoretical, Powerpoint
	Human louse (Head, Body and Pubic louse) as important insect vectors		1	Theoretical, Powerpoint
	Control of human louse		1	Theoretical, Powerpoint, suggestive question in google classroom
NOV	<b>Class test</b>		1	QUIZ in Google classroom
	<b>Unit-7 Hemiptera as Disease Vectors</b>	Chinmoy Ghosh		
	Bugs as insect vectors		1	Theoretical, Powerpoint
	Blood-sucking bugs; Chagas disease		1	Theoretical, Powerpoint
	Bed bugs as mechanical vectors		1	Theoretical, Powerpoint
	Control and prevention measures		1	Theoretical, Powerpoint, suggestive question in google classroom
	<b>Class Test</b>		1	QUIZ in Google classroom
	<b>Assessment: End-term Test</b>			ONLINE
			Total: 35Hrs	

## Resources :

1. Books: Graduation Zoology for WBSU (Ghosh and Santra), Essential Medical Parasitology (Aparna S. Sastry)
2. Other resources : Wikipedia, YouTube video link, ebooks

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- Methodology of teaching (whether using ICT, engaging students in group discussion, quiz etc. etc.)
- Different modes of assessment. (Please check UGC evaluation reforms).

## **Semester- 5<sup>th</sup> SEM**

**Lesson Plan for Course:... Applied Zoology. Code...ZOOGDSE01T... Credit.....06.**

- Course coordinator:.....**Subharaj Paul**
- Course Outcome
  - **CO1:** In this DSE course component, students can learn about the different animal interaction, emphasizing on the influence of parasitism.
  - **CO2:** To understand the Epidemiology of Diseases.
  - **CO3:** To know about the different group of parasite and their life cycle and pathogenesis.
  - **CO4:** To learn about the pest and pest management.
  - **CO5:** Students can also learn about livestock industry, their problem and management.

### **Course planner**

Month	Course Topic	Teacher	Class-hour	Remarks*
Aug	<b>Unit-1</b> Host, Definitive host, Intermediate host, Parasitism, Symbiosis, Commensalism, Reservoir, Zoonosis.	SP	03	Classroom lecture lecture method and PPT presentation, youtube animation.
	<b>Unit-2:</b> Transmission, Prevention and control of diseases: Tuberculosis, Typhoid.	SP	03	Provide pdf material.
	<b>Unit-3</b> Brief account of <i>Rickettsia prowazekii</i> , <i>Borrelia recurrentis</i> and <i>Treponema pallidum</i> .	SP	03	Ref: Book
Sep	<b>Unit-4:</b> Life history and pathogenicity of <i>Entamoeba histolytica</i> , <i>Plasmodium vivax</i> and <i>Trypanosoma gambiense</i>	SP	04	Qu-answer method
	<b>Unit-5:</b> Life history and pathogenicity of <i>Ancylostoma duodenale</i> and <i>Wuchereria bancrofti</i>	SP	02	
<b>30<sup>th</sup> Sept to 28<sup>th</sup> Oct Puja vacation.</b>				

Nov	<b>Unit-6:</b> Biology, Control and damage caused by <i>Helicoverpa armigera</i> , <i>Pyrilla perpusilla</i> and <i>Papilio demoleus</i> , <i>Callosobruchus chinensis</i> , <i>Sitophilus oryzae</i> and <i>Tribolium castaneum</i>	SP	08	Classroom lecture and study ref, books
	<b>Unit-7:</b> Medical importance and control of <i>Pediculus humanus corporis</i> , <i>Anopheles</i> , <i>Culex</i> , <i>Aedes</i> , <i>Xenopsylla cheopis</i>	SP	05	Classroom lecture and study ref, books
Dec	<b>Unit-8:</b> Preservation of semen and artificial insemination in cattle.	SP	01	Classroom lecture and study ref, books
	<b>Unit-9:</b> Principles of poultry breeding, Management of breeding stock and broilers, Processing and preservation of eggs.	SP	02	Classroom lecture and study ref, books
	<b>Unit-10:</b> Genetic improvements in aquaculture industry; Induced breeding and transportation of fish seed	SP	01	Classroom lecture and study ref, books
	<b>Assessment: End-term Test</b>		Total: 44 Hrs	

### Resources:

- Books: Parasitology by K D Chatterjee.
- Snatak pranibidya by Santra Publication.
- Other resources: different website source such as Wikipidia, youtube etc.

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