



200L
UNIVERSITY DEPARTMENT OF ZOOLOGY
VINOBA BHAVE UNIVERSITY
HAZARIBAG

Office: 06546-291705

Ref.No. 200L/155/23

Date 08/7/23

To
The Controller of Examination
VBU
Hazaribag

Subject: Submission of UG generic Syllabus (2015-18; 2016-19) under CBCS

Sir,

Please find the attached one copy of undergraduate syllabus of Zoology for the session 2015-2018 & 2016-2019 framed and passed by the department

This is for perusal and needful

Head


(Dr. B. Kr. Gupta)

Encl:

A copy of UG Syllabus


08/7/23

SEMESTER I

B.Sc. Zoology –Generic Elective/ General

B.Sc. First Year

~~Semester I Core Course –CC-1A~~

Animal Classification & Diversity

Teaching Hours: 4X12=48 hrs

FM: 75 (External 60 + 15 Internal)

Group A

UNIT-1 General characters and classification (up to classes) of the following phyla Protozoa, Porifera, Coelenterate, Platyhelminthes, Annelida, Mollusca, Arthropoda, Echinodermata & Hemichordate with examples

UNIT-2 Non Chordates Form & function

- a. Protozoa: Pathogenicity, treatment & prevention of diseases caused by *Entamoeba histolytica* & *Leishmania donovani*
- b. Porifera: Canal System of *sycon*
- c. Coelenterata: Life Cycle of *obelia* & Metagenesis
- d. Aschelminthes: *Ascaris*- life cycle & their pathogenicity
- e. Annelida: *Pheretima* -Excretory system
- f. Arthropoda: *Palaemon*- Respiratory System
- g. Mollusca; *Pila*- Respiratory system
- h. Echinodermata: *Asterias*- Water vascular System

Group B

UNIT-3 General characters and classification of living chordates of the following Classes Amphibia, and Reptilia

UNIT-2 Study of following types

1. Pisces: Respiratory & Accessory Respiratory organs
2. Reptilia: Biting mechanism of snake, Poison gland, Venom
3. Aves: Flight Adaptation in Birds
4. Mammals: Characters, distribution and affinities of prototheria

Practical CC1A

Credit -2

Classification & Animal diversity

Hrs of working -24

Time: 1 and half Hr

FM:20

1. Dissection: (one)	05
2. Mounting of given specimens	02
3. Spotting	
a. Slides 0X2=	04
b. Specimens 0X2=	04
4. <u>Practical Record & Viva</u>	<u>05</u>
	<u>20</u>

List of suggested Practicals

1. Dissection –Paleomon –Nervous system
2. **Mounting:** Spicules of porifera; Obelia colony, Daphnia, trachea and salivary gland of cockroach
3. **Museum Specimens:** Sycon, Euspongia, Aurelia, Gorgonia, Porpitta, Vallela, Metridium, Fungia, Tubipora, Pennatula, Meandrina, Tapeworm, Fasciola, Ascaris, Pheretima, Hirudinaria, Neries, Pila, Unio, Loligo, Sepia, Octopus, Hermit Crab, Prawn, Asretias, Sea Urchin, Brittle star
4. **Permanent slides:** Paramecium Slide (WM), L.S of Sycon, Obelia Colony, Medusa, Fasciola (W.M), Proglottids of Tapeworm, T.S of Pheretima through different regions, T.S of male & female Ascaris,

SEMESTER II

CC-2A

Teaching Hours: 4X12=48 hrs

Cell Biology

FM:75 (60 External +15 Internal)

UNIT-1 Cell Structure & Functions

- 1.1 Study of structure & function of Plasma membrane
- 1.2 Study of cell Organelle-Mitochondria, ribosomes, lysosomes,
- 1.3 Ultra structure of Chromosomes
- 1.4 Cell Division: mitosis

UNIT-2 Principle of Genetics

- 2.1 Mendel's Law of Inheritance
- 2.2 Linkage and Crossing Over
- 2.3 DNA: Structure & function

UNIT-3 Concept of gene expression

- 3.1 Semi conservative DNA Replication in prokaryotes
- 3.2 Transcription in Prokaryotes
- 3.3 Translation in Prokaryotes

UNIT-4 Evolution

- 4.1 Theory of organic evolution; Lamarckism's theory of inheritance of acquired characters
- 4.2 Darwin's theory of natural selection

G.E./C.A.-2P (PRACTICAL)

Duration : 1½ hrs.	Marks (Exter. 20 : Inter. 05)	(02 Credits)
1. Pedigree analysis	05	
2. Slide preparation	04	
3. Spotting :		
A. Slides of cell division-	02 1×2 = 02	
B. Analogous & homologous	02 2×2 = 04	
Organs / fossil / extinct models		
4. Practical Record and Viva	05	
	Total = 20	

List of suggested Practicals

1. Preparation of stained Squash of onion root tip to demonstrate mitosis
2. Preparation of bacterial slide for study of prokaryote
3. Study of permanent slides of cell division
4. Study sex linked characters : Hemophilia and Colour blindness through Pedigree
5. Study of homologous and analogous organ
6. Study of some fossils / extinct models : Dinosaurs, Archeopteryx

SEMESTER - III

B.Sc. second Year Semester III - ~~Core Course~~ - CC-3A

Biochemistry, Physiology & Developmental Biology

Teaching Hrs: 4X12=48

FM:75 (60 External + 15 Internal)

Biochemistry

UNIT-1 Structure and classification of biomolecules

- 1.1 protein,
- 1.2 carbohydrate
- 1.3 lipids

UNIT-2 Metabolism

- 2.1 Glycolysis
- 2.2 Krebs Cycle

Physiology

- UNIT-1 Blood composition , Blood Coagulation
- UNIT-2 Respiration: Transport of gases (O₂ & CO₂)
- UNIT-3 Digestion of food : Protein, carbohydrate and lipid
- UNIT-4 Excretion: Nephron & Urine formation

Developmental biology

- UNIT-1 Fertilization
- UNIT 2 Cleavage
- UNIT-3 Placenta & their Function

Practical -P-3 Based on CC-3A

Credit-2 **Biochemistry, Physiology and Developmental Biology** Working Hrs -24

Time -1 and Half Hr

FM: 20

1. Detection of presence of bio molecules in the sample
2. Physiology Experiment
3. Spotting
 - a. Slides of reproductive organs
 - b. Endocrine Slides
 - c. Slides of Developmental Biology
4. Practical Records & Viva

05
05
05

01
02
02
05

Suggested Practicals

Biochemistry, Physiology and Developmental Biology

1. Biochemical test for Protein carbohydrate (Starch & Glucose) & Lipids
2. Determination of Hb%
3. Records of Blood pressure in Normal & after exercise Study of slides of Reproductive organ: Testes, Ovary & Uterus
4. Study of Endocrine Gland's Slides
5. Study of Permanent slides of Chick Embryo (WM) -18 hrs , 24 hrs, 36 hrs & 72 hrs

Semester III

~~SEC~~

Credit -2 As per University Decision Teaching Hrs :24 FM- External 40+
10 Internal)

SEMESTER - IV

Semester IV

~~Core Course - 4A~~

Ecology & Economic Zoology

Credit -4

Hours of Teaching: 4X12=48hrs

FM:60

Ecology

1. General Concepts

- 1.2 Ecosystem
- 1.2 Food Chain & food Web & Ecological Pyramids
- 1.3 Energy Flow
- 1.4 Bio-Geochemical Cycle: Nitrogen & Carbon

2 Population and Communities

- 2.1 Ecological succession

3. Environmental Pollution

- 3.1 Pollution Sources & Impacts of Environmental Pollution-Air & Water
- 3.2 Green House Gases and Effects

4. Natural Resources and conservation

- 1.4 Renewable & Non-renewable Energy Source

Economic Zoology

UNIT-1. Api culture

UNIT-2 Sericulture

UNIT-3 Lac Culture

Practical -4 Based on CC-4A

Credit -2

Ecology & Economic Zoology

Time:1 and half hr

FM-20

1. Ecology Practical	05
2. Spotting	
a. Slides of Economic Zoology 0X2 =	04
b. Specimens of Economic Zoology 0X3 =	06
3. <u>Practical Records & Viva</u>	05
	<u>20</u>

List of Suggested Practicals

Ecology

1. Determination of pH in soil and water
2. Estimation of free carbon dioxide
3. Model of Food chain

Economic Zoology

1. Slides of-Mouth part of culex, anopheles, Plasmodium (Signet ring)
2. Common paddy and sugar cane pest,
3. Life cycle of Honey bee,
4. Cocoon of silk worm
5. Lack infestation on stick