Yogoda Satsanga Mahavidyalaya
JAGANNATHPUR, DHURWA, RANCHI – 834004
Email address: ysmranchi4@gmail.com
(NAAC Accredited, Grade: B++, CGPA: 2.89)

Course plan

NAME OF THE DEPARTMENT: Zoology

NAME OF THE FACULTY: Dr. Indumati Thakur

Dr. Anjana Verma

Dr. Rakhee Lohia

ACADEMIC SESSION: August, 2022

YEAR: 2022

PROGRAM: B. Sc.

SEMESTER: III

COURSE TYPE: Core

COURSE: DIVERSITY OF CHORDATA

COURSE CODE: CC-5

TOTAL CREDIT: 6 = (4 Theory, 02 Practical)

Program Outcomes (POs):

Student should be able to,

PO1- Apply the knowledge and concepts of biology and its fundamental principles and to identify, analyze and find solutions to various biological problems.

PO2- Identity, hypothesize, and review available research literature, and analyze complex biological issues reaching substantiated conclusions using knowledge of biodiversity, environment, and biological functioning.

PO3- Develop scientific temperament, an ability to merge, interconnect and extrapolate information and knowledge across various streams.

PO4- Ability to decide appropriate technology and tools to solve problems. Understand the availability, of resources, their judicious use, and the execution of the project in sustainable way.

PO5- Design solutions for complex scientific problems and design processes that meet the specified needs with appropriate consideration for public health & safety, cultural, societal, legal, constitutional and environmental considerations.

PO6- Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO7- Communicate effectively on complex scientific activities with the science community and with society at large, such as, being able to comprehend and write effective reports and design documents, make effective presentations, and give and receive clear instructions.

PO8- Demonstrate knowledge and understanding of the scientific principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO9- Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of scientific developments, technological advancements and global changes.

PO10- Value and foster Physical, Physiological and Psychological well-being through personal practice and conduct. Ability to apply the learnings for a lifelong commitment to ethics in fulfilment of professional and social obligations.

PO11- Apply academic learning to promote higher studies, sustainable living through employment, and initiation of entrepreneurial advent to create opportunities and wealth for self and society.

PO12- Value and support social causes and rural development through service and philanthropic activities.

PROGRAM-SPECIFIC OUTCOMES (PSOs):

Student should be able to,

PSO1: An ability to demonstrate in-depth knowledge and understanding of the fundamental concepts, principles, and processes underlying the academic field of Zoology and its different subfields like animal diversity, principles of ecology, comparative anatomy and developmental biology of vertebrates, physiology, endocrinology, biochemistry, genetics, and evolutionary biology, animal biotechnology, applied Zoology, aquatic biology, immunology, reproductive biology, parasitology, entomology, apiculture, aquarium fish keeping, medical diagnostics, and sericulture.

PSO2: Development of procedural knowledge and merging it with the advanced techniques available to create different types of professionals in the field of Zoology and related fields such as Apiculture, Fisheries, Medical Diagnostics, Sericulture, Paleozoology, Ornithology, Herpetology, Forensics, Bioinformatics, and Arachnology.

PSO3: Understand and appreciate the complexity of life processes, their molecular, cellular, and physiological processes, their genetics, evolution, and behavior, and their interrelationships with the environment.

COURSE OUTCOMES (COs):

CO1: They get an introduction to the higher phylum of animal kingdom.

CO2: They are familiar with many species of chordates.

CO3: Can identify and classify chordates.

CO4: They gain detailed impressions of the various species around them.

CO5: Aware of their taxonomy and characteristics.

Correlation between POs and COs

POs → COs ↓	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	**3**	**2**	**2**	**2**	**-**	**1**	**-**	**-**	**-**	**-**	**3**	**3**	**-**	**-**
CO2	**3**	**2**	**2**	**2**	**-**	**1**	**-**	**-**	**-**	**3**	**3**	**3**	**-**	**-**
CO3	**3**	**3**	**3**	**3**	**-**	**2**	**1**	**-**	**2**	**2**	**3**	**3**	**3**	**1**
CO4	**3**	**2**	**2**	**2**	**-**	**2**	**-**	**2**	**-**	**3**	**1**	**2**	**1**	**-**
CO5	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	**-**	**3**	**-**	**2**	**2**	**-**
CO6	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**3**	**-**	**2**	**2**	**2**

1. Weak 2. Moderate 3. Strong

Course teaching and learning activities

A. PEDAGOGY

i. Whiteboard
ii. Flipped Class
iii. PPT
iv. Debate
v. Group Discussions

B. COURSE COMPLETION PLAN

UNIT	NO. OF LECTURES			TEST	QUIZ	ASSIGNMENT
	THEORY	PRACTICAL	TUTORIAL			
1	2	2	-	1	1	-
2	8	8	-	1	1	-
3	3	3	-	1	1	-
4	2	2	-	1	1	-
5	8	8	-	1	1	-
6	6	6	-	1	1	-
7	7	7	-	1	1	-
8	8	8	-	1	1	-
9	8	8	-	1	1	-
10	8	8	-	1	1	-

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COURSE DELIVERY PLAN:

UNIT	TOPIC/SUBTOPIC	LECTURE REQUIRED	CO ADDRESSED	ASSIGNMENT /TEST/QUIZ
1	**Introduction to Chordates** General characteristics and outline classification	2	CO 1	1
2	**Protochordata** General characteristics of Hemichordata, Urochordata and Cephalochordata; Study of larval forms in protochordates*;* Retrogressive metamorphosis in Urochordata	8	CO 1, 2, 4, 5	2
3	**Origin of Chordata** Dipleurula concept and the Echinoderm theory of origin of chordates; Advanced features of vertebrates over Protochordata	3	CO 2, 4, 5, 6	1
4	**Agnatha** General characteristics and classification of cyclostomes up to class	2	CO 5, 6	2
5	**Pisces** General characteristics of Chondrichthyes and Osteichthyes, classification up to order Migration, Osmoregulation and Parental care in fishes	8	CO 1, 2, 3	1
6.	**Amphibia** Origin of *Tetrapoda* (Evolution of terrestrial ectotherms); General characteristics and classification up to order; Parental care in Amphibians	6	CO 1, 2, 3	2
7.	**Reptilia** General characteristics and classification up to order; Affinities of *Sphenodon*; Poison apparatus and Biting mechanism in snakes	7	CO 3,4,5,6	4
8.	**Aves** General characteristics and classification up to order *Archaeopteryx*-- a connecting link; Principles and aerodynamics of flight, Flight adaptations and Migration in birds	8	CO 4, 5, 6	1
9.	**Mammals** General characters and classification up to order; Affinities of Prototheria; Adaptive radiation with reference to locomotory appendages	8		
10.	**Zoogeography** Zoogeographical realms, Theories pertaining to distribution of animals, Plate tectonic and Continental drift theory, distribution of vertebrates in different realms	8		

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A. COURSE OUTCOME ASSESSMENT PLAN

a. DIRECT ASSESSMENT

(Please tick the appropriate column)

COURSE OUTCOME	ASSESSMENT				REMARKS
	QUIZ	TEST	MID SEMESTER	END SEMESTER	
CO1	✓	✓	✓		
CO2	✓	✓	✓		
CO3	✓	✓	✓		
CO4	✓	✓	✓		
CO5	✓	✓	✓		

b. INDIRECT ASSESSMENT (STUDENT SURVEY)

Name of the Student:
University Roll no/ Class roll no.:
Name of the Programme:
Semester and Session:
Course and Course Code:

Rate the following aspects of course outcomes. Use the scale 1-3

S. No	Course Outcome	1	2	3
1.	CO1			
2.	CO2			
3.	CO3			
4.	CO4			
5.	CO5			

1. Average
2. Good
3. Very Good

B. REMEDIAL CLASSES

S.NO.	ROLL. NO. & SESSION	NAME OF THE STUDENT	MARKS OF MID SEM /CLASS TEST	REMEDIAL CLASSES HELD			END SEM EXAM	IMPROVEMENT (Y/S)
				DATE	TIME	MODE		

C. SUGGESTED READINGS

a. TEXT BOOKS

b. REFERENCE BOOKS

i. Young, J. Z. (2004). *The Life of Vertebrates*. III Edition. Oxford university press.

ii. Pough H. *Vertebrate life*, VIII Edition, Pearson International.
iii. Darlington P.J. *The Geographical Distribution of Animals*, R.E. Krieger Pub Co.
iv. Hall B.K. and Hallgrimsson B. (2008). *Strickberger's Evolution*. IV Edition. Jones and Bartlett Publishers Inc.

c. VIDEO RESOURCE
d. WEB RESOURCES:-
e. E-RESOURCES