



List of New Course(s) Introduced

Department : Zoology

Programme Name : B.Sc.

Academic Year : 2018-19

List of New Course(s) Introduced

Sr. No.	Course Code	Name of the Course
01.	LS/ZOO/CC-101L	Non-Chordates-I (Protista to Pseudocoelomata)
02.	LS/ZOO/CC-102L	Principles of Ecology
03.	LS/ZOO/GE-101L	Aquatic Biology
04.	LS/ZOO/CC-201L	Non-Chordates-II (Coelomata)
05.	LS/ZOO/CC-202L	Cell Biology
06.	LS/ZOO/GE-201L	Environment and Public Health


विभागाध्यक्ष
HEAD
सस्य विभाग विभाग
Department of Zoology
गुरु घासीदास वि.वि., बिलासपुर
Guru Ghasidas Vishwavidyalaya, Bilaspur



Minutes of Meetings (MoM) of Board of Studies (BoS)

Academic Year : 2018-19

School : School of Studies of Life Sciences

Department : Zoology

Date and Time : July 06, 2018 - 4:00 PM

Venue : Department of Zoology

The scheduled meeting of member of Board of Studies (BoS) of Department of Zoology, School of Studies of Life Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur was held to design and discuss the B. Sc. Hons (I to VI semesters) scheme and syllabi.

The following members were present in the meeting:

1. Prof. Sangeeta Shukla (External Expert Member BoS, Dept. of Zoology., Jiwaji University, Gwalior)
3. Dr. Monika Bhadauria (HOD, Associate Prof., Dept. of Zoology, GGV.-cum Chairman, BOS)
4. Dr. Rohit Seth (Member BoS, Associate Professor, Dept. of Zoology, GGV)
5. Dr. Santosh Singh (Member, Assistant Professor, Dept. of Zoolgy, GGV)

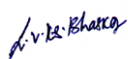
Following points were discussed during the meeting

1. The previous B.Sc. Zoology, Course (Session 2017-18) was scrutinized and changed as per CBCS scheme. The CBCS scheme was fully adopted as per UGC guidelines and courses were changed as per given syllabus by the UGC.
2. As per UGC CBCS guidelines the Generic elective, Skill Enhancement course and discipline specific electives were offered.
3. Total 14 core courses, 04 Generic elective, 02 Skill enhancement course, and 04 discipline specific elective were offered for I to VI semesters of B.Sc. Program.

The committee discussed and approved the scheme and syllabi. All courses were newly introduced in B. Sc Honors Zoology, (CBCS from I to IV semester).

List of new courses in 2018-19:

Sr. No.	Course Code	Name of the Course
01.	LS/ZOO/CC-101L	Non-Chordates-I (Protista to Pseudocoelomata)
02.	LS/ZOO/CC-102L	Principles of Ecology
03.	LS/ZOO/GE-101L	Aquatic Biology
04.	LS/ZOO/CC-201L	Non-Chordates-II (Coelomata)
05.	LS/ZOO/CC-202L	Cell Biology
06.	LS/ZOO/GE-201L	Environment and Public Health


निष्ठासमर्थक
HEAD
अनु विज्ञान विभाग
Department of Zoology
गुरु घासीदास वि. वि., बिलासपुर
Guru Ghasidas Vishwavidyalaya, Bilaspur

Signature & Seal of HOD

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर - 495009 (छ.ग.)



Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur - 495009 (C.G.)

Scheme and Syllabus

SCHEME AND SYLLABUS

2018-19

FOR

CHOICE BASED CREDIT SYSTEM (CBCS)

FOR B.Sc. HONOURS ZOOLOGY

DEPARTMENT OF ZOOLOGY

SCHOOL OF LIFE SCIENCES

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (CG)

Neeraj
Sandeep Singh

Daugala

Manish
617118

विभागाध्यक्ष
HEAD
जन्तु विज्ञान विभाग
Department of Zoology
गुरु घासीदास वि.वि., बिलासपुर
Guru Ghasidas Vishwavidyalaya, Bilaspur



B.Sc. Hon's (Zoology): CBCS 2018-2019

School of Life Sciences

Semester I				
Course Opted	Course Code	Name of the course	Credit	H/week
Core Course-1 Theory	LS/ZOO/CC-101 L	Non Chordates - I (Protista to Pseudocoelomate)	4	4
Core Course-1 Practical	LS/ZOO/CC-101 P	Lab Course	2	4
Core Course-2 Theory	LS/ZOO/CC-102 L	Principles of Zoology	4	4
Core Course-2 Practical	LS/ZOO/CC-102 P	Lab Course	2	4
Generic Elective-1 Theory	LS/ZOO/GE-101 L	Aquatic Biology	4	4
Generic Elective-1 Practical	LS/ZOO/GE-101 P	Lab Course	2	4
Ability Enhancement Compulsory Course-1	LS/ZOO/AE-101/EC	English Communication / MIL (Hindi Communication)	4*	4
Extracurricular activity		Tour, Field visit/ Industrial training/ NSS/ Swachhita/ Vocational Training/ Sports/ others	2	(2)
TOTAL			24	28
Semester II				
Core Course-3 Theory	LS/ZOO/CC-201 L	Non Chordates - II (Coelomates)	4	4
Core Course-3 Practical	LS/ZOO/CC-201 P	Lab Course	2	4
Core Course-4 Theory	LS/ZOO/CC-202 L	Cell Biology	4	4
Core Course-4 Practical	LS/ZOO/CC-202 P	Lab Course	2	4
Generic Elective-2 Theory	LS/ZOO/GE-201 L	Environment and Public Health	4	4
Generic Elective-2 Practical	LS/ZOO/GE-201 P	Lab Course	2	4
Ability Enhancement Compulsory Course-2	LS/ZOO/AE-201/ES	Environmental Science	4*	4
Extracurricular activity		Tour, Field visit/ Industrial training/ NSS/ Swachhita/ vocational Training/ Sports/ others	2	(2)
Total			24	28
Summer Internship: 15 days		Swayam Swachhita / NSS / Industrial/ others	2	100
Semester III				
Core Course-5 Theory	LS/ZOO/CC-301 L	Diversity of chordates	4	4
Core Course-5 Practical	LS/ZOO/CC-301 P	Lab Course	2	4
Core Course-6 Theory	LS/ZOO/CC-302 L	Physiology: Controlling and Coordinating systems	4	4
Core Course-6 Practical	LS/ZOO/CC-302 P	Lab Course	2	4
Core Course-7 Theory	LS/ZOO/CC-303 L	Fundamentals of Biochemistry	4	4
Core Course-7 Practical	LS/ZOO/CC-303 P	Lab Course	2	4
Generic Elective-3 Theory	LS/ZOO/GE-301 L	Food Nutrition and Health	4	4
Generic Elective-3 Practical	LS/ZOO/GE-301 P	Lab Course	2	4
Skill Enhancement Course-1	LS/ZOO/SEC-301 L	Sericulture	2	4
Skill Enhancement Course-1	LS/ZOO/SEC-301 P	Lab Course	2	4
Total			28	34
Semester IV				
Core Course-8 Theory	LS/ZOO/CC-401 L	Comparative anatomy of vertebrates	4	4
Core Course-8 Practical	LS/ZOO/CC-401 P	Lab Course	2	4
Core Course-9 Theory	LS/ZOO/CC-402 L	Physiology: Life Sustaining Systems	4	4
Core Course-9 Practical	LS/ZOO/CC-402 P	Lab Course	2	4
Core Course-10 Theory	LS/ZOO/CC-403 L	Biochemistry of Metabolic Processes	4	4



Department of Zoology, School of Life Sciences, GGV, Bilaspur

CORE COURSE I

LS/ZOO/CC-101 L

NON-CHORDATES I: PROTISTA TO PSEUDOCOELOMATA

THEORY

(Credits 4)

Unit 1: Protista, Parazoa and Metazoa	19
General characteristics and classification up to classes; Study of <i>Euglena</i> , <i>Amoeba</i> and <i>Paramecium</i> ; Life cycle and pathogenicity of <i>Plasmodium vivax</i> and <i>Entamoeba histolytica</i> ; Locomotion and Reproduction in Protista; Evolution of symmetry and segmentation of Metazoa	
Unit 2: Porifera	7
General characteristics and classification up to classes; Type study of <i>Sycon</i> ; Canal system and spicules in sponges	
Unit 3: Cnidaria	12
General characteristics and classification up to classes; Type study of <i>Obelia</i> ; Polymorphism in Cnidaria, Corals and coral reefs	
Unit 4: Ctenophora	4
General characteristics and Evolutionary significance	
Unit 5: Platyhelminthes	10
General characteristics and classification up to classes; Type study, larval forms and pathogenicity of <i>Fasciola hepatica</i>	
Unit 6: Nematelminthes	8
General characteristics and classification up to classes; Type study of <i>Ascaris lumbricoides</i> ; Life cycle and pathogenicity of and <i>Wuchereria bancrofti</i> ; Parasitic adaptations in helminthes	

Chugale

Sankar Singh

Rawat

Mavib

विभागाध्यक्ष
HEAD
जन्य विभाग विभागाध्यक्ष
Department of Zoology
Guru Ghasidas Vishwavidyalaya, Bilaspur



Department of Zoology, School of Life Sciences, GGV, Bilaspur (CG)

CORE COURSE II

LS/ZOO/CC-102 L

PRINCIPLES OF ECOLOGY

THEORY

(Credits 4)

Unit 1: Introduction to Ecology	6
History of ecology; Autecology and synecology; Levels of organization; Laws of limiting factors-Liebig's law of minimum and Shelford's law of tolerance; Study of physical factors	
Unit 2: Ecosystem	12
Types of ecosystems with one example in detail; Trophic levels; Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains; Food web; Energy flow through ecosystem; Ecological pyramids and Ecological efficiencies; Nutrient and biogeochemical cycle (nitrogen cycle); Human modified ecosystem	
Unit 3: Population	18
Unique and group attributes of population: Density, natality, mortality, life tables, fecundity tables, survivorship curves, age and sex ratio, dispersal and dispersion, Exponential and logistic growth, equation and patterns, r and k strategies; Population regulation-density-dependent and independent factors; Population interactions;	
Unit 4: Community	10
Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Ecotone and edge effect; Ecological Succession, Types of Succession, Theories pertaining to climax community	
Unit 5: Human impact on environment	10
Environmental Pollution: Air, water and noise pollution; Global environmental issues: Greenhouse effect, Acid rain, Global Warming, Ozone depletion.	
Unit 6: Applied Ecology	4
Ecology in Wildlife Conservation and Management	

Neelam

Santosh Singh

3

Dangal

Mavika

विभागाध्यक्ष
HEAD
अनु विभाग विभाग
Department of Zoology
www.ggv.ac.in, Bilaspur



Department of Zoology, School of Life Sciences, GGV, Bilaspur (CG)

CORE COURSE III

LS/ZOO/CC-201 L

NON-CHORDATES II: COELOMATA

THEORY

(Credits 4)

Unit 1: Introduction to Coelomates	2
Evolution of coelom and metamerism	
Unit 2: Annelida	10
General characteristics and Classification up to classes; Type study of <i>Pheretima</i>	
Unit 3: Arthropoda	17
General characteristics and Classification up to classes; Type study of <i>Periplaneta</i> ; Vision and Respiration in Arthropoda; Larval forms in Arthropoda; Metamorphosis in Insects; Social life in bees and termites	
Unit 4: Onychophora	4
General characteristics and Evolutionary significance with special reference to <i>peripatus</i>	
Unit 5: Mollusca	15
General characteristics and Classification up to classes; Type study of <i>Pila</i> ; Respiration in Mollusca; Torsion and detorsion in Gastropoda; Pearl formation in bivalves; Evolutionary significance of trochophore larva	
Unit 6: Echinodermata	12
General characteristics and Classification up to classes; Type study of <i>Asterias</i> ; Water-vascular system in Asteroidea; Larval forms in Echinodermata; Affinities with Chordates	

Chandra C.

Santosh Singh

Mouib
विभागाध्यक्ष
HEAD
जीव विज्ञान विभाग
Department of Zoology

Neeraj



CORE COURSE IV

LS/ZOO/CC-202 L

CELL BIOLOGY

THEORY

(Credits 4)

Unit 1: Overview of Cells	8
Prokaryotic and Eukaryotic cells, Virus, Viroids, Mycoplasma, Prions, Cell Theory,	
Unit 2: Plasma Membrane	12
Various models of plasma membrane, Structure And Function of Plasma Membrane. Transport across membranes: Active and Passive transport, Facilitated transport. Cell junctions: Tight junctions, Desmosomes, Gap junctions	
Unit 3: Cellular Organelles And Endomembrane System	12
Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus, Lysosomes, Peroxisomes. Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis, Mitochondrial Respiratory Chain, Chemi-osmotic hypothesis.	
Unit 4: Cytoskeleton	8
Structure and Functions: Microtubules, Microfilaments and Intermediate filaments	
Unit 5: Nucleus	10
Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleolus. Chromatin: Euchromatin and Hetrochromatin and packaging (nucleosome). Giant Chromosomes: Polytene And Lampbrush	
Unit 6: Cell division and Signaling	10
Mitosis, Meiosis, Cell cycle and its regulation. GPCR and Role of second messenger (cAMP)	

Chandras

Sankar Singh

Mouso

Navee

विभागाध्यक्ष
HEAD
उत्तम विज्ञान विभाग
Department of Zoology
गुरु गहासीदास विश्वविद्यालय, बिलासपुर
Bilaspur, Chhatisgarh, India



GENERIC ELECTIVE COURSES

LS/ZOO/GE-101 L

AQUATIC BIOLOGY

THEORY

(Credits 4)

UNIT 1: Aquatic Biomes

Brief introduction of the aquatic biomes: Freshwater ecosystem (lakes, wetlands, streams and rivers), estuaries, intertidal zones, oceanic pelagic zone, marine benthic zone and coral reefs.

UNIT 2: Freshwater Biology

Lakes: Origin and classification, Lake as an Ecosystem, Lake morphometry, Physico-chemical Characteristics: Light, Temperature, Thermal stratification, Dissolved Solids, Carbonate, Bicarbonates, Phosphates and Nitrates, Turbidity; dissolved gases (Oxygen, Carbon dioxide). Nutrient Cycles in Lakes-Nitrogen, Sulphur and Phosphorous.

Streams: Different stages of stream development, Physico-chemical environment, Adaptation of hill-stream fishes.

UNIT 3: Marine Biology

Salinity and density of Sea water, Continental shelf, Adaptations of deep sea organisms, Coral reefs, Sea weeds.

UNIT 4: Management of Aquatic Resources

Causes of pollution: Agricultural, Industrial, Sewage, Thermal and Oil spills, Eutrophication, Management and conservation (legislations), Sewage treatment Water quality assessment- BOD and COD.

Moulik
Head
जन्म विभाग विभागा
Department of Zoology
गुरु घासीदास विश्वविद्यालय, बिलासपुर
Guru Ghasidas Vishwavidyalaya, Bilaspur
47

Dasgupta

Sankar

Dasgupta



Department of Zoology, School of Life Sciences, GGV, Bilaspur (CG)

GENERIC ELECTIVE COURSES

ZOO/GE-201 L

ENVIRONMENT AND PUBLIC HEALTH

THEORY

(Credits 4)

Unit 1: Introduction

Sources of Environmental hazards, hazard identification and accounting, fate of toxic and persistent substances in the environment, dose Response Evaluation, exposure Assessment.

Unit 2: Climate Change

Greenhouse gases and global warming, Acid rain, Ozone layer destruction, Effect of climate change on public health

Unit 3: Pollution

Air, water, noise pollution sources and effects, Pollution control

Unit 4: Waste Management Technologies

Sources of waste, types and characteristics, Sewage disposal and its management, Solid waste disposal, Biomedical waste handling and disposal, Nuclear waste handling and disposal, Waste from thermal power plants, Case histories on Bhopal gas tragedy, Chernobyl disaster, Bhopal disaster and Three Mile Island accident and their aftermath.

Unit 5: Diseases

Causes, symptoms and control of Tuberculosis, Asthma, Cholera, Minamata disease, typhoid

Singhal

Mehta

TO THE HONORABLE
HEAD
उत्तम विद्यालय विभाग
Department of Zoology
गुरु घासीदास वि.वि., बिलासपुर
Guru Ghasidas Vishwavidyalaya, Bilaspur

49
Singh Singh

Raw