



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDDEBIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 2.58 on seven point scale at 'B+' Grade)

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Ref. No. :

Date :

1.3.2 Documents showing the experimental learning through project work/ field work/ internship as prescribed by the affiliating university curriculum. Minutes of the Boards of studies/ Academic Council meetings with approvals for the year 2016-17, 2017-18, 2018-19 and 2019-20, 2020-21

Sl.No	Name of the Course that include experimental learning through project work/ Field work/ Internship	Title of Projects
01	Zoology: Applied Zoology and Ethology	1. Vermi Culture
02	Zoology: Applied Zoology and Ethology	2. Zooplankton in Krishna River
03	Zoology: Applied Zoology and Ethology	3. Microscopy
04	Zoology: Applied Zoology and Ethology	4. Check list of Birds of Muddebihal Taluk
05	Zoology: Applied Zoology and Ethology	5. Local Fishes of Muddebihal Taluk
		6. Check list of Reptiles of Muddebihal Taluk
		7. Check list Mammals of Muddebihal Taluk
		8. Local Insects of Muddebihal Taluk
		9. Local Insects
		10. Microscopy
		11. Local Fishes of Muddebihal Taluk
		12. Apiculture
		13. Mimicry in Animals
		14. Microscopy
		15. Biodiversity
		16. Mimicry in Animals
		17. Mimicry in Animals
		18. Sericulture




PRINCIPAL,

M. G. V. C. Arts, Com. & Science College
MUDDEBIHAL - 586212.



RANI CHANNAMMA UNIVERSITY

BELAGAVI

THE COURSE STRUCTURE & SYLLABUS OF UNDER GRADUATE

BACHELOR OF SCIENCE

ZOOLOGY

1ST TO 6TH Semesters

w.e.f.

Academic Year 2020-21 and Onwards
Under

CHOICE BASED CREDIT SYSTEM (CBCS)

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First Semester B.Sc. (Zoology)

Paper Code: ZOODSCT 1.1
Teaching Hours: 4 H / Week
Total hours:60

Paper Title: Animal Diversity
Marks: Th-80+IA-20
Credits :3

UNIT – 1

15 Hours

Kingdom Protista: General characters and classification up to classes with one example for each class. Locomotion in Protozoa

Phylum Porifera: General characters and classification up to classes with one example for each class. Canal System in *Sycon*

Phylum Cnidaria: General characters and classification up to classes with one example for each class. Polymorphism

Phylum Platyhelminthes: General characters and classification up to classes with one example for each class. Parasitic adaptations

Phylum Nematelminthes: General characters and classification up to classes with one example for each class. Life history of *Ascaris*. Parasitic adaptations in roundworms

UNIT – 2

15 Hours

Phylum Annelida: General characters and classification up to classes with one example for each class. Metamerism in Annelida

Phylum Arthropoda: General characters and classification up to classes with one example for each class. Metamorphosis in Insects

Phylum Mollusca: General characters and classification up to classes with one example for each class. Torsion in gastropods

Phylum Echinodermata: General characters and classification up to classes with one example for each class. Water-vascular system in Asteroidea

UNIT – 3

15 hours

Phylum Chordata: Characters of chordates. Differences between chordates and non-chordates. General features of Protochordata (Brief note on Hemichordata, Urochordata, Cephalochordata)

Agnatha and Gnathostomata: General features of Agnatha and Gnathostomata. Classification of cyclostomes up to classes

Pisces: General features and classification up to living orders. Scales in fishes Migration in Fishes



Amphibia: General features and classification up to living orders. Parental care amphibians

Reptiles: General features and Classification up to living orders. Differences between poisonous and non-poisonous snakes. Snake bite and treatment

UNIT – 4

15 Hours

Aves: General features. Salient features of Passeriformes, Pisciformes, Columbiformes,

Mammals: General characters. Salient features of Monotremes, Marsupialia, Insectivora, Rodentia, Perissodactyla, Chirpotera, Edentata, Cetaceae and Primates with one example for each. Ear ossicles in mammals.

Suggested Readings:

1. Agarwal V. P. and Dalela R. C. (1975): Textbook of Vertebrate Zoology. Jai Prakashnath Co.
2. Barnes, R.D. (1982): Invertebrate Zoology. Fifth edition
3. Barnes, R.D. (1982): Vertebrate Zoology. Fifth edition
4. Barnes, R.S.K., Calow, P., Olive, P.J.W Golding, D.W. and Spicer, J.I. (2002): The Invertebrates: A
5. New Synthesis, III Edition, Blackwell Science
6. Barrington E. J. W. (1981): Invertebrate structure and Function. ELBS. Dhama P.S. and Dhama J. K.
7. (2000): Chordate Zoology. S. Chand & Co. Dhama P.S. and Dhama J. K. (2000): Invertebrate Zoology. S. Chand & Co.
8. Ekambaranatha Iyer M. and Anantakrishnan T. N. (1990): A manual of Zoology. Vol. I. Invertebrata (Part 1 &2). S. Vishwanathan Pvt. Ltd.
9. Ekambaranatha Iyer M. and Anantakrishnan T. N. (1990): A manual of Zoology. Vol. II. Chordata S. Vishwanathan Pvt. Ltd.
10. Jordan E. L. and Verma P.S. (1976): Chordate Zoology. S. Chand & Co. Jordan E. L. and Verma
11. P.S. (1976): Invertebrate Zoology. S. Chand & Co.
12. Kotpal R. L. (1993): Protozoa- Echinodermata (all volumes). Rastogi Publ. Pough H (2004): Vertebrate life, VIII Edition, Pearson International.
13. Ruppert and Barnes, R.D. (2006): Invertebrate Zoology, VIII Edition. Holt Saunders International Edition.



Fifth Semester B.Sc. (Zoology)

Paper Code: ZOODSET 5.1
Teaching Hours: 4 H / Week
Total hours:60

Paper Title: Applied Zoology & Ethology

Marks: Th-80+IA-20

Credits :3

UNIT – 1

15 Hours

Vermitechnology: Species of Earthworms used in vermitechnology, Vermiculture technique and importance of vermiculture Brief account of Vermicompost, vermiwash and vermicast

Aquaculture: *Prawn fisheries:* Species of prawns, culture of freshwater and marine prawns, preservation and processing of prawns

Pearl culture: Pearl producing molluscans, pearl formation, pearl producing sites in India. Quality and composition of pearl industry: Artificial insertion of nucleus

Pisciculture: Brief technique of fish culture, Composite fish culture, Preservation of fishes and their by-products

UNIT - 2

15 Hours

Animal husbandry: *Poultry:* Breeds of fowl, diseases of poultry, maintenance of poultry farm, Backyard and Cage system of rearing Composition of egg and nutritive value of egg

Dairy technology: Cattle and Buffalo breeds (both exotic and indigenous), Diseases of cattle and buffaloes. Products and byproducts. Composition of milk and nutritive value of cow milk

Parasites: Life history of Entamoeba, Plasmodium, Trypanosoma, Ascaris, Wuchereria

Insects of economic importance: Economic importance of Honey bees & silkworms

UNIT – 3

15 Hours

Introduction to Host-parasite Relationship: Host, Definitive host, Intermediate host, Parasitism, Symbiosis, Commensalism

Epidemiology of Diseases: Transmission, Prevention and control of diseases: Tuberculosis, typhoid

Lac culture: Classification and life history of Lac insect (*Tectardia lacca*). Host plants, cultivation of Lac, composition, properties and economic importance

UNIT – 4

15 Hours

Ethology: Introduction, scope, contributions of Lorenz, Tinbergen and Karl Von Frisch

Types of animal behaviour: (1) Innate Behaviour: Taxes, Reflexes, Instincts and Motivation. (2) Learned Behaviour: Habituation, Imprinting, Conditioned, Reflexes and Insight learning (3) Social behaviour: Types of animal society and colony in Honey Bees and Monkey troops (4) Territoriality & Courtship Behaviour in Scorpion, Stickle Back Fish and Peacock (5) Study of nesting behavior and mimicry in animal (6) Biological clock, Circadian rhythm and Chronobiology

Animal communication: Chemical, Visual and Audio. Functions of Signals odors, sounds and light

Parental care: Concepts, Parental care in Fishes, Amphibians and Birds

Sixth Semester B.Sc. (Zoology)



Paper Code: ZOODSET 6.1
Teaching Hours: 4 H / Week
Total hours:60

Paper Title: Reproductive Biology
Marks: Th-80+IA-20
Credits :3

Unit 1:

15 Hours

Reproductive Endocrinology: Gonadal hormones and mechanism of hormone action, steroids, glycoprotein hormones, and prostaglandins, hypothalamo – hypophyseal – gonadal axis, regulation of gonadotrophins, secretion in male and female; Reproductive System: Development and differentiation of gonads, genital ducts, external genitalia

Unit 2:

15 Hours

Functional anatomy of male reproduction: Outline and histological of male reproductive system in rat and human; Testis: Cellular functions, germ cell, stem cell renewal; Spermatogenesis: kinetics and hormonal regulation; Androgen synthesis and metabolism; Epididymal function and sperm maturation; Accessory glands functions; Sperm transportation in male tract

Unit 3:

15 Hours

Functional anatomy of female reproduction: Outline and histological of female reproductive system in rat and human; Ovary: folliculogenesis, ovulation, corpus luteum formation and regression; Steroidogenesis and secretion of ovarian hormones; Reproductive cycles (rat and human) and their regulation, changes in the female tract; Ovum transport in the fallopian tubes; Sperm transport in the female tract, fertilization; Hormonal control of implantation; Hormonal regulation of gestation, pregnancy diagnosis, foeto – maternal relationship; Mechanism of parturition and its hormonal regulation; Lactation and its regulation

Unit 4:

15 Hours

Reproductive Health: Infertility in male and female: causes, diagnosis and management; Assisted Reproductive Technology: sex selection, sperm banks, frozen embryos, in vitro fertilization, ET, EFT, IUT, ZIFT, GIFT, ICSI, PROST; Modern contraceptive technologies; Demographic terminology used in family planning



Sixth Semester B.Sc. (Zoology)

Paper Code: ZOODSET 6.2A

Paper Title: Ecology, Zoogeography and Wildlife Conservation

Teaching Hours: 4 H / Week

Marks: Th-80+IA-20

Total hours:60

Credits :3

UNIT-I

15Hours

Ecology: (Part – A)

Earth as living planet, sub divisions of ecology, scope of ecology, biosphere

Abiotic factors: Light and Temperature (effect on animals and plants)

Biotic Factor: Mutualism, commensalism, amensalism, parasitism, predation, competition and parasitism

Biogeochemical cycles: Principles and concepts of water, nitrogen, carbon, oxygen cycles

Community ecology: Community structure, ecological niches, edge effect, stratification, ecotone

UNIT-II

15 Hours

Ecology: (Part – B)

Habitats: *Freshwater* habitat Lotic and Lentic systems. *Zonation of Sea*, Marine Biota, *Estuarine ecology*, *Mangrooves*. *Terrestrial* habitat: A brief account of Biomes. Ecological Adaptations of Freshwater, Marine and Terrestrial fauna. Ecological Adaptations of *Freshwater*, Marine and Terrestrial animals

Population ecology: Density, natality, mortality, age distribution, population growth, types and curves

UNIT-III

15 hours

Zoogeography: Zoogeographical realms of world, a brief account of Wallace's line, means of dispersal, factors affecting the dispersal of animals, continental drift theory, types of distribution of animals, island life, insular fauna, new world marsupials

UNIT-IV

15 hours

Wildlife and its Conservation: Wildlife conservation methods, Wildlife in India, Causes for the depletion of wildlife, Wildlife conservation techniques, methods and measures. Brief account of: IUCN, WWF, Bombay Natural History Society, Indian Board for Wild Life, Red Data Book. Wild Life Act 1972 and its amendments in India, CITES. Project Tiger and Biosphere Reserve. Management of protect areas, Conservation of wetlands, Wildlife ecotourism



Sixth Semester B.Sc. (Zoology)

Paper Code: ZOODSET 6.2A

Paper Title: Ecology, Zoogeography and Wildlife Conservation

Teaching Hours: 4 H / Week

Marks: Th-80+IA-20

Total hours:60

Credits :3

UNIT-I

15Hours

Ecology: (Part – A)

Earth as living planet, sub divisions of ecology, scope of ecology, biosphere

Abiotic factors: Light and Temperature (effect on animals and plants)

Biotic Factor: Mutualism, commensalism, amensalism, parasitism, predation, competition and parasitism

Biogeochemical cycles: Principles and concepts of water, nitrogen, carbon, oxygen cycles

Community ecology: Community structure, ecological niches, edge effect, stratification, ecotone

UNIT-II

15 Hours

Ecology: (Part – B)

Habitats: *Freshwater* habitat Lotic and Lentic systems. *Zonation of Sea*, Marine Biota, *Estuarine ecology*, *Mangrooves*. *Terrestrial* habitat: A brief account of Biomes. Ecological Adaptations of Freshwater, Marine and Terrestrial fauna. Ecological Adaptations of *Freshwater*, Marine and Terrestrial animals

Population ecology: Density, natality, mortality, age distribution, population growth, types and curves

UNIT-III

15 hours

Zoogeography: Zoogeographical realms of world, a brief account of Wallace's line, means of dispersal, factors affecting the dispersal of animals, continental drift theory, types of distribution of animals, island life, insular fauna, new world marsupials

UNIT-IV

15 hours

Wildlife and its Conservation: Wildlife conservation methods, Wildlife in India, Causes for the depletion of wildlife, Wildlife conservation techniques, methods and measures. Brief account of: IUCN, WWF, Bombay Natural History Society, Indian Board for Wild Life, Red Data Book. Wild Life Act 1972 and its amendments in India, CITES. Project Tiger and Biosphere Reserve. Management of protect areas, Conservation of wetlands, Wildlife ecotourism