KARNATAK UNIVERSITY, DHARWAD
ACADEMIC (S&T) SECTION
ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಧಾರವಾಡ
ವಿದ್ಯಾಮಂದಿಳ (ವಿಜ್ಞ&ತಿ) ವಿಭಾಗ

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NAAC Accredited
'A' Grade 2014

website: kud.ac.in

No. KU/Aca(S&T)/SVB-06/BOS /Zoology (UG) /20-21/ 992 Date: 16 OCT 2020

NOTIFICATION

Sub: Regarding introduction of the syllabus of Zoology UG under C.B.C.S. w.e.f. the academic year 2020-21 & onwards.

Ref: 1. UGC Letter DO No. 1-1/2016(SECY), dt. 10.08.2016.
2. Special BOS Res. No. 01, dt. 04.07.2020.
3. Special Faculty Res. No. 14, dt. 11.08.2020.
4. Special Academic Council Res. No. 39, dt. 21.08.2020.
5. Vice-Chancellor's order dated - 07 - 10 - 2020

Adverting to the above, it is hereby notified to the Principals of all constituent and affiliated degree colleges coming under the jurisdiction of Karnatak University, Dharwad that the Zoology UG syllabus for I to VI Semester which is annexed herewith in Annexure-A is introduced under C.B.C.S. from the academic year 2020-21 & onwards.

Hence, the contents of this notification may please be brought to the notice of the students and all the concerned. The prescribed C.B.C.S. syllabus may also be obtained through K.U.website (www.kud.ac.in).

(Dr. Hanumantappa K.T)
REGISTRAR

To,

1. The Chairman, BOS Zoology (UG), Dept. of Zoology, K.U.Dharwad.
2. The Chairman, Dept. of Zoology, K.U.Dharwad.
3. The Principals of all the constituted and affiliated degree colleges under the jurisdiction of Karnatak University, Dharwad. (The same may be sent through e-mail)
4. The Registrar (Evaluation), K.U.Dharwad.

Copy fwcs to:

1. Dr. Ch.Ramesh, Dean, Faculty of Science & Tech., Dept. of Zoology, K.U.Dharwad.
2. The Director, IT Section, Examination Section, K.U.Dharwad for information and to upload on K.U.Website (www.kud.ac.in).

Copy to:

1. PS to Vice-Chancellor, K.U.Dharwad.
2. S.A. to Registrar, K.U.Dharwad.
3. O.S., Exam UG / Confl / QP / GAD Section, K.U.Dharwad.
4. The System Analysist, Computer Unit Exam Section, K.U.Dharwad.

KARNATAK UNIVERSITY, DHARWAD

CBCS SYLLABUS

FOR

BACHELOR OF SCIENCE

ZOOLOGY

(I TO VI SEMESTERS)

FROM

2020-21 & ONWARDS

PREAMBLE

Zoology is the study of animals as well as human beings. It comprises and deals with the study of the organisms; development structure, classification, habits, habitats, distribution, physiology, biochemistry, genetics, evolution, etc. Many branches, specialization and fields of Zoology have contributed immensely to the progress of human welfare. The university has introduced the CBCS system, which gives an opportunity to the students to choose any field and acquire knowledge in the subject Zoology. The knowledge gained in the subject not only leads the students to pursue higher education and research, but also enables them to undertake self employment.

OBJECTIVES

The main purpose of B.Sc. Zoology course is to create knowledge among the students to know the importance of animals with emphasis on the following domains.

- To impart the knowledge on the systematic classification, physical structure, physiological functions, biological functions, culture and maintenance of beneficial organisms, etc.
- To gain skill in microscopy, preparation of sample, observations of animal activities at molecular, structural and organisms level.
- To make the students to acquaint with estimations, analysis of molecules to carry out routine clinical analysis of any samples.
- To make the students to aware and emphasize the role of genes/chromosomes in inheritance and genetic diseases.
- To make them self employable and a good entrepreneur in the course.

For fulfillment of the above objectives the following papers namely, non chordate, chordate, histology, evolution, paleontology, biostatistics, molecular cell biology, developmental biology, biochemistry, physiology, ethology, applied zoology, genetics, biotechnology, nanotechnology, ecology, zoogeography and wildlife biology have been introduced in the B.Sc. Zoology degree course.

OUTCOME OF THE COURSE

By learning Zoology subject with emphasis on above said different domains, the students will acquire the necessary knowledge and skills to pursue further studies and research in a wide range of subjects like, molecular biology, applied zoology, genetics, biotechnology, environmental biology, wildlife biology, ethology, etc. One can also make use of the knowledge to become a self entrepreneur using the economically important animals and their products.

Karnatak University, Dharwad

CBCS syllabus for Under Graduate Programme in Zoology (optional)

Effective from 2020-21

Sem	Theory / Practical	Subject Code	Total Teaching hours per week	Total Teaching hours per Semester	Duration of Exams	Internal Assessment Marks	Semester End Exam Marks	Total Marks	Credits
I	**Theory**	**DSC ZOOT: 1.1**	**04 hrs**	**60**	**03 hrs**	**20**	**80**	**100**	**04**
	Practical	**DSC ZOOP: 1.1**	04 hrs	60	03 hrs	**10**	**40**	**50**	**02**
I	**Theory**	**DSC ZOOT: 2.1**	04 hrs	60	03 hrs	**20**	**80**	**100**	**04**
I	**Practical**	**DSC ZOOP: 2.1**	04 hrs	60	03 hrs	**10**	**40**	**50**	**02**
III	**Theory**	**DSC ZOOT: 3.1**	04 hrs	60	03 hrs	**20**	**80**	**100**	**04**
	Practical	**DSC ZOOP: 3.1**	04 hrs	60	03 hrs	**10**	**40**	**50**	**02**
IV	**Theory**	**DSC ZOOT: 4.1**	04 hrs	60	03 hrs	**20**	**80**	**100**	**04**
	Practical	**DSC ZOOP: 4.1**	04 hrs	60	03 hrs	**10**	**40**	**50**	**02**
V	**Theory**	**DSE ZOOT: 5.1A OR ZOOT: 5.1B**	04 hrs	60	03 hrs	**20**	**80**	**100**	**04**
	Practical	**DSE ZOOP: 5..1A OR ZOOP:5.1B**	04 hrs	60	03 hrs	**10**	**40**	**50**	**02**
	Theory	**SEC-1 ZOOT: 5.2A**	02 hrs	30	02 hrs	**10**	**40**	**50**	**02**
	Theory	**SEC-2 ZOOT: 5.2B**	02 hrs	30	02 hrs	**10**	**40**	**50**	**02**
VI	**Theory**	**DSE ZOOT: 6.1A OR DSE ZOOT: 6.1B**	04 hrs	60	03 hrs	**20**	**80**	**100**	**04**
	Practical	**DSE ZOOP: 6.1A OR ZOOP: 6.1B**	04 hrs	60	03 hrs	**10**	**40**	**50**	**02**
	Theory	**SEC-1 ZOOT: 6.2A**	02 hrs	30	02 hrs	**10**	**40**	**50**	**02**
	Theory	**SEC-2 ZOOT: 6.2B**	02 hrs	30	02 hrs	**10**	**40**	**50**	**02**
Total						**220**	**880**	**1100**	**44**

Credit means the unit by which the course work is measured. One hour session of Lecture per week for 16 weeks amounts to 1 credit. Four hours session of Practicals per week for 16 weeks amounts to 2 credits per semester.

PRACTICAL DSCZOOP 1.1

1. Classification of each phylum upto classes with at least one suitable example.
2. Study of Leech/Cockroach- externals, digestive system, nervous system, Jaws, nephridia, ovary of Leech, Mouth parts, salivary glands, spermatheca of cockroach.
3. Mouth parts of insects permanent slides.
4. Study of protozoan culture/Vermiculture.
5. Collection and preservation methods of insects.

Collection methods: Hand picking, beating, aerial and aquatic nets, Burlese funnel and aspirator.
Trapping methods, types; light trap, sticky trap, pitfall Trap, bait, pheromone trap.
Preservation methods: Dry method (Pinning), Wet method (Liquid preservation) and microscopic preservation (Slide preservation).
Morphological Identification and Dissection of Insects:
Digestive, Circulatory, Nervous, excretory and Reproductive system.

6. Insect Culture: Media preparation for collection and culture. (*Drosophila*).
7. Field study.

SCHEME OF PRACTICAL EXAMINATION

1. Explain the system in	10
2. Protozoan culture/ Rectal parasites /nephredia/ovary/jaw/mouthparts/ salivary glands/Spermatheca	05
3. Identifications (A to E)	10
4. Field Study Report	06
5. Viva	04
6. Journal	05
	Total 40

II SEMESTER
PAPER DSCZOOT 2.1 : CHORDATA

Total Teaching Hours:60hrs

I INTRODUCTION — 05 hrs
General characters of the phylum and classification up to sub phyla. Hemichordata, Urochordata, Cephalochordata with suitable examples. Retrogressive metamorphosis in Urochordates.

II VERTEBRATA — 02 hrs
General characters of vertebrates and outline classification.

III CYCLOSTOMATA — 02 hrs
General organization and distribution.

IV PISCES — 06 hrs
Chondrichthies: General Characters with suitable examples.
Osteichthyes: General Characters with examples. Fish migration, types of scales and fins.

V AMPHIBIA — 04 hrs
General characters and classification up to orders with suitable examples.

VI REPTILIA — 05 hrs
General characters and classification up to orders (living reptiles only) with suitable examples. Poisonous and non-poisonous snakes of India and types of venom.

VII AVES — 09 hrs
General characters and classification. Distinctive features of archaeornithes and neornithes with reference to palaeognathae (flightless birds), Impennae and Neognathae,giving suitable examples. Flight adaptations, beak and foot modifications.

VIII MAMMALIA — 15 hrs
General characters and classification up to orders. Distinctive features of prototheria and metatheria with examples (with special emphasis on monotremes and marsupials). Important characters of primates, Chiroptera, Cetacea, Perissodactyla. Artiodactyla, Carnivora, Rodentia, Lagomorpha and Pholiodota with examples. Rat as type study – (muscular system excluded)

IX OSTEOLOGY — 08 hrs
Study of endoskeleton of *Frog* and *Rabbit.*

X COMPARATIVE ANATOMY — 04 hrs
Comparative account of Heart, brain.

PRACTICAL DSCZOOP 2.1

1. Classification up to orders with at least one suitable example.
2. Study of Local fish/rat/chick (anyone) externals, Digestive system, Circulatory system, Urinogenital system and brain
3. Endoskeleton of *frog* and *rabbit*
4. Comparative anatomy of heart and brain.

FIELD ORIENTED PROJECTS:

1. Field Study is compulsory
2. Visit to Zoo/forest/sanctuaries/ national park/ surrounding area to study the animal diversity related to project i.e., study the fishes, amphibians, reptiles, birds and mammals.

XII. POULTRY SCIENCE 05 hrs

Introduction, breeds of fowls, poultry keeping, nutritive value of egg and meat, poultry diseases.

XIII. DAIRY TECHNOLOGY 05 hrs

Introduction, breeds of cattle, breeding and cattle improvement in India nutritive value of milk and milk byproducts.

XIV SERICULTURE 05 hrs

Introduction,Life cycle of Bombyx mori, Rearing of silkworm (Early and Late age), Types Of montages, Harvesting of cocoons and Spinning. Diseases of silkworm and control . Measures.

Credit : 02 PRACTICAL DSCZOOP 5.1B

1. Identification of castes in social insects.
2. Observation of courtship behavior in animals.
3. Observation of parental care in animals.
4. Observation of different types of nests and nest materials.
5. Coloration and mimicry.
6. Breeds of poultry.
7. Study of commercially important
   a. Crustaceans
   b. Molluscs
   c. Fishes
8. Visit to nearby diary, poultry, bee keeping unit, vermiculture unit and termite mound for observation.

SCHEME OF PRACTICAL EXAMINATION

1. Estimation	10
2. Identification-5	10
3. Project works report on ecology/wildlife biology	10
4. Viva connected with field work report	05
5. Journal	05
Total	**40**