ಕ್ರ.ಸಂ

ಗುಲಬರ್ಗಾ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕಲಬುರಗಿ.

ಜ್ಞಾನ ಗಂಗಾ, ಕಲಬುರಗಿ–585 106, ಕರ್ನಾಟಕ, ಭಾರತ

(ಕರ್ನಾಟಕ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯಗಳ ಅಧಿನಿಯಮ 1976ರಸ್ವಯ 10–09–1980 ರಂದು ಸ್ಥಾಪಿಸಲಾದ ವಿಶ್ವವಿದ್ಯಾಲಯ ಮತ್ತು 2000ರ ಅಧಿನಿಯಮದ ಅಡಿಯಲ್ಲಿ ಬದಲಾಯಿಸಿದಂತೆ)

ದೂರವಾಣಿ ಸಂ. 08472-263202 ಫ್ಯಾಕ್ಸ್: 08472-263206, ಇ–ಮೇಲ್: registrargug@rediffmail.com

ವಿದ್ಯಾಮಂಡಲ

ಕ್ರ.ಸಂ.ಗುವಿಕ/ವಿಮವಿ/ಬಿಓಎಸ್/2024–25/ 177 ದಿನಾಂಕ: 23/07/24

ಅಧಿಸೂಚನೆ

ವಿಷಯ: ಸ್ನಾತಕ ಪದವಿ ಕೋರ್ಸಿನ **ಪ್ರಾಣಿಶಾಸ್ತ್ರ ವಿಷಯದ** ಪಠ್ಯಕ್ರಮ ಅನುಮೋದಿಸಿ 2024–25ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಜಾರಿಗೊಳಿಸಿದ ಬಗ್ಗೆ.

ಉಲ್ಲೇಖ:1. ಸರ್ಕಾರದ ಆದೇಶ ಸಂಖ್ಯೆ. ಇಡಿ 166 ಯುಎನ್ಇ 2023 ಬೆಂಗಳೂರು, ದಿನಾಂಕ:08.05.2024

2. ಪ್ರಾಣಿಶಾಸ್ತ್ರ ವಿಷಯದ ಸ್ನಾತಕ ಅಧ್ಯಯನ ಮಂಡಳಿಯ ನಿರ್ಣಯ ದಿನಾಂಕ: 26.06.2024

3. ವಿಜ್ಞಾನ ನಿಕಾಯಗಳ ಸಮಿತಿ ಸಭೆಯ ನಿರ್ಣಯ ದಿನಾಂಕ: 11.07.2024

4. ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಯ ಅನುಮೋದನೆ ದಿನಾಂಕ: 15.07.2024

5. ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಅನುಮೋದನೆ ದಿನಾಂಕ:

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ಸರ್ಕಾರದ ನಿರ್ದೇಶನದಂತೆ, 2024–25ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಜಾರಿಗೊಳಿಸಿರುವ ಸ್ನಾತಕ ಪದವಿ ಪಠ್ಯಕ್ರಮವನ್ನು ಜಾರಿಗೊಳಿಸಬೇಕಾಗಿರುವ ಪ್ರಯುಕ್ತ **ಪ್ರಾಣಿಶಾಸ್ತ್ರ** ಅಧ್ಯಯನ ಮಂಡಳಿಯು ಪಠ್ಯಕ್ರಮವನ್ನು ಪರಿಷ್ಕರಿಸಿ ಶಿಫಾರಸ್ಸು ಮಾಡಿರುವುದರಿಂದ ಸದರಿ ಪಠ್ಯಕ್ರಮವನ್ನು ವಿಜ್ಞಾನ ನಿಕಾಯದ ಸಭೆಯಲ್ಲಿ ಒಪ್ಪಿಗೆ ಪಡೆದಿರುವಂತೆ, ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಯ ಅನುಮೋದನೆಯಂತೆ ಪದವಿ ಕೋರ್ಸಿನ **ಪ್ರಾಣಿಶಾಸ್ತ್ರ** ಸ್ನಾತಕ ಪಠ್ಯಕ್ರಮವನ್ನು 2024–25ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಅನ್ವಯವಾಗುವಂತೆ ಜಾರಿಗೊಳಿಸಲಾಗಿದೆ.

ಈ ಮಾಹಿತಿಯನ್ನು ಸಂಬಂಧಪಟ್ಟ ಶಿಕ್ಷಕರ ಹಾಗೂ ವಿದ್ಯಾರ್ಥಿಗಳ ಗಮನಕ್ಕೆ ತರಲು ಸೂಚಿಸಲಾಗಿದೆ. ಪಠ್ಯಕ್ರಮದ ವಿವರಗಳನ್ನು ಗುಲಬರ್ಗ ವಿಶ್ವವಿದ್ಯಾಲಯದ ವೆಬ್‌ಸೈಟ್ www.gug.ac.in ದಿಂದ ಪಡೆಯಬಹುದಾಗಿದೆ.

ಕುಲಸಚಿವರು
ಗುಲಬರ್ಗಾ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕಲಬುರಗಿ

ಗೆ,

1. ಮುಖ್ಯಸ್ಥರು, **ಪ್ರಾಣಿಶಾಸ್ತ್ರ** ವಿಭಾಗ, ಗುಲಬರ್ಗಾ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕಲಬುರಗಿ.
2. ಎಲ್ಲಾ ಪದವಿ ಕಾಲೇಜುಗಳ ಪ್ರಾಂಶುಪಾಲರುಗಳಿಗೆ.

ಪ್ರತಿಗಳು:

1. ಡೀನ್‌ರು, ಕಲಾ ನಿಕಾಯ, ಗುಲಬರ್ಗಾ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕಲಬುರಗಿ ರವರ ಮಾಹಿತಿಗಾಗಿ.
2. ಕುಲಸಚಿವರು (ಮೌಲ್ಯಮಾಪನ) ಗುಲಬರ್ಗಾ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕಲಬುರಗಿ
3. ನಿರ್ದೇಶಕರು, ಪಿಎಂಇಬಿ ಗುಲಬರ್ಗಾ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕಲಬುರಗಿ ರವರ ಮಾಹಿತಿಗಾಗಿ.
4. ಗ್ರಂಥಪಾಲಕರು, ಗುಲಬರ್ಗಾ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕಲಬುರಗಿ ರವರ ಮಾಹಿತಿಗಾಗಿ.
5. ವಿಜ್ಞಾನ ನಿಕಾಯದ ಎಲ್ಲಾ ಅಧ್ಯಯನ ವಿಭಾಗಗಳ ಮುಖ್ಯಸ್ಥರಿಗೆ ಗು.ವಿ. ಕಲಬುರಗಿ
6. ಸಂಯೋಜಕರು, ಟಾಸ್ಕ್‌ಫೋರ್ಸ್ ಸಮಿತಿ, ಗುಲಬರ್ಗಾ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕಲಬುರಗಿ ರವರ ಮಾಹಿತಿಗಾಗಿ.
7. ವಿಶೇಷಾಧಿಕಾರಿಗಳು, ಆಡಳಿತ, ವಿದ್ಯಾಮಂಡಲ, ಪರೀಕ್ಷಾ, ಅಭಿವೃದ್ಧಿ ಗು.ವಿ. ಕಲಬುರಗಿ ರವರ ಮಾಹಿತಿಗಾಗಿ.
8. ಮುಖ್ಯಸ್ಥರು, ಗಣಕ ಕೇಂದ್ರ, ಗು.ವಿ. ಕಲಬುರಗಿ ರವರಿಗೆ ವೆಬ್‌ಸೈಟ್‌ನಲ್ಲಿ ಪ್ರತ್ಯೇಕ ಪೋರ್ಟಲ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಸೂಚಿಸಲಾಗಿದೆ.
9. ನೋಡಲ್ ಅಧಿಕಾರಿಗಳು, UUCMS, ಗು.ವಿ.ಕಲಬುರಗಿ ಇವರ ಮಾಹಿತಿಗಾಗಿ
10. ಕುಲಪತಿಗಳ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿ/ಕುಲಸಚಿವರ ಆಪ್ತ ಸಹಾಯಕರ ಗು.ವಿ. ಕಲಬುರಗಿ ರವರ ಮಾಹಿತಿಗಾಗಿ.

STATE EDUCATION POLICY (SEP)

Proposed Curriculum Framework of

ZOOLOGY

for

UNDERGRADUATE PROGRAMME

Colleges affiliated

to

GULBARGA UNIVERSITY

Submitted by

CHAIRMAN

DEPARTMENT OF STUDIES AND RESEARCH IN ZOOLOGY

2024-25 Onwards

DSC-ZT-1
Semester-I

Course objective: *This course is designed to give a learner the fundamental understanding of taxonomy and the diversity of non-chordate phyla with emphasis on their key characteristics, classification and functioning.*

Learning outcome: *After the completion of this course, a student will be able to*

- *Learnbasictaxonomyskillsanddemonstrateidentificationandclassificationofnon-chordates*
- *Understand the general and distinct characters of Non-chordate phyla*
- *Comprehend and explain evolutionary relationship among various Non-chordate groups*

Content	Teaching Hrs	Credits
Unit-I: Animal Taxonomy	12	4
1.1. Introduction to systematics: terms & definitions 1.2. Utility and strategy of systematics with emphasis on α, β & ɤ taxonomy 1.3. Taxonomic characters: introduction & types, Outline classification of Kingdom Animalia		
Unit-II: Protozoa, Porifera and Coelentrata	12	
2.1. **Protozoa:** General characters and classification up to classes with examples. **Type study** : Amoeba (Morphology Locomotion, Nutrition & Reproduction) 2. 2.**Porifera:** General characters and classification up to classes with examples. **Type study:** Sycon (Morphology, Canal system & Skeletal elements). 2. 3. **Coelentrata:** General characters and classification up to classes with examples. **Type study:** Hydra (Morphology & Reproduction) **Ctenophora:** General characters and classification with examples and its affinities.		
Unit-III: Platyhelminthes, Nematoda & Annelida	12	
3.1. **Platyhelminthes:** General characters and classification up to classes with examples. **Type study:** *Taenia solium* (Morphology, Life cycle and pathogenicty). 3.2. **Nematoda:** General characters and classification up to classes with examples. **Type study:** *Ascaris lumbricoides* (Morphology Life cycle and pathogenicty) 3.3. **Annelida:** General characters and classification up to classes with examples. **Type Study**: Earthworm (Morphology, Digestive & Reproduction).		

Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoology
Gulbarga University, Kalaburagi-585106

Unit-IV: Arthropoda, Mollusca & Echinodermata	12	
4.1. **Arthropoda:** General Characters and classification up to classes with examples. **Type study:** Prawn (Morphology, Appendages, Nervous System and Reproduction) **General Topics:** Peripatus & its affinities. Mouth parts in insects & insect metamorphosis. 4.2. **Mollusca:** General Characters and classification up to classes with examples. **Type study:** Pila (Morphology, Shell, Respiration, Nervous System and & Torsion. 4.3. **Echinodermata**: General Characters and classification up to classes with examples. **Type study:** Star fish (Morphology, Water Vascular system). Larval forms in Echinodermata & its evolutionary significance).		

Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoology
Gulbarga University, Kalaburagi-585106

DSC-ZP-1

Semester-I

Animal Systematics and Biology of Non-Chordates

PRACTICALS: **(2 Credits)**

Section I:

- **Slide study of Protozoa:** *Paramecium, Euglena, Amoeba, Trypanosoma and Plasmodium.*
- **Museum study of Porifera:** *Sycon, Spongilla, Euplectella, Hyalonema, Euspongia.*
- **Museum study of Coelenterata:** *Obelia, Hydra, Physalia, Metridium.*
- **Museum study of helminthes:** Planaria, *Taenia, Fasciola, & Ascaris, Trichuris, Filaria Bancrofti*
- **Annelida:** *Nereis, Aphrodite, Pheritema, Hirudinaria,.*
- **Museum study of Arthropoda:** *Palaemon,* Limulus, *Julus, Scolopendra, Termite* , wasp.

Section II:

- **Museum study of Mollusca:** *Octopus, Chiton, Pila, Unio, Aplysia*
- **Echinodermata:** *Asterias, Echinus, Antedon , Holothuria.*
- Dissection of Earthworm –*Nervous system.*
- Dissection of Pila -Nervous system
- Dissection of Star fish- Water vascular system
- Preparation of temporary mount of Cockroach mouth parts & sting apparatus of honey bee.

Suggested Books:

- Invertebrate Structure & Function by E.J.Barrington and Nelson, London Publishers.
- Invertebrate Zoology by P.S Dhami and J.K Dhami. R-Chand & Company
- Invertebrate Zoology by Ruppert and Barnes. Holt Saunders Publishers
- Modern Textbook of Zoology: Invertebrates by R.LKotpal. Rastogi Publishers
- Invertebrate Zoology by E.L Jordan and P.S. Verma. S.Chand Publishers
- Principles and Practices of Animal Taxonomy by V.C Kapoor. Science Publishers.
- A Manual of Practical Zoology by P.S. Verma.
- A Text book of Invertebrate Practical Zoology by Vivekan HYPERLINK "https://www.amazon.in/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Vivekanand%2BBanerjee&search-alias=stripbooks"
- Practical Zoology: Invertebrate (English, Rastogi Publications, by S.S.Lal)

Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoolo
Gulbarga University, Kalaburagi-5851

DSC-2Z

Semester-II

Course objective: *This course is designed to give a learner the fundamental understanding of taxonomy and the diversity of chordate phyla with emphasis on their key characteristics, classification and functioning.*

Learning outcome: *After the completion of this course, a student will be able to Learn basic taxonomy skills and demonstrate identification and classification of chordates*

- *Understand the general and distinct characters of chordate phyla*
- *Comprehend and explain evolutionary relationship among various chordate groups*

Content	Teaching Hrs	Credits
Unit-I: Introduction of Chordates	**12**	**4**
1.1 General characteristics and outline classification of Phylum Chordata. 1.2.General characteristics and classification of sub-phylum Hemichordata, Urochordata and Cephalochordate up to Classes with examples. Metamorphosis in Ascidia. 1.3 General characteristics and classification of cyclostomes up to order with examples.		
Unit-II: Pieces	12	
2.1. Pisces: General characteristics and classification of Pisces up to order with examples. 2. 2. General characteristics of Chondrichthyes & Osteichthyes 2.3. Accessory respiratory organ, Migration in fishes; Parental care in fishes		
Unit-III: Amphibia and Reptiles	12	
3.1 Amphibia: General characteristics and classification up to order with examples. 3.2 Metamorphosis, Neoteny, Paedomorphosis Parental care in Amphibia 3.3. Reptilia: General characteristics and classification up to orders with examples. Poison apparatus and Biting mechanism in Snake. Poisonous & Non Poisonous snakes.		
Unit-IV: Aves and Mammals	12	
4.1. Aves: General characteristics and classification up to living Sub-Classes; Exoskeleton and migration in Birds; Principles and aerodynamics of flight: Flight adaptations ; Flightless Birds 4.2. Mammals: General characters and classification up to living sub classes Exoskeleton derivatives of mammals; 4.3. Adaptive radiation in mammals with reference to locomotory appendages.		

Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoology
Gulbarga University, Kalaburagi-585106

Semester-II

Biology of Chordates

RACTICALS: Teaching 24 hours (2 Credits)

Section I:

- **Protochordata:** Balanoglossus, Herdmania & Amphioxus
- **Agnatha:** Petromyzon, Myxine.
- **Fishes:** Scoliodon, Sphyrna, Pristis, Torpedo, Mystus, Heteropneustes, *Labeo rohita*, Exocoetus, Hippocampus, Anabas, Flat fish
- **Amphibia:** Necturus, *Bufo* (Duttaphrynus) *melanostictus*, *Rana* (Hoplobatrachus) *tigerinus*, Hyla, Tylototriton, Axolotl larva
- **Reptilia:** Chelone, Trionyx, Hemidactylus, Varanus, Calotes, Chamaeleon, Draco, Vipera, Naja, Hydrophis,
- **Mammalia:** Bat (Insectivorous and Frugivorous), Funambulus (Indian Palm squirrel)

Section II:

- Skeletal system in Man:-

  Skull, vertebrae, girdles and limb bones (Except hands and feet)

Section III:

- Comparative account of Heart in Calotes, Pigeon and Man
- Comparative account of Brain in Shark, Frog and Calotes

Section IV:

- Dissections of Shark & Rat-Digestive, Urino-genital system, Brain and Pituitary
- Pectin from Calotes/Fowl head.

Section V:

- Power point presentation on study of habit, habitat or behavior of any animal by student-for internal assessment only.

Suggested Books:

- The Life of Vertebrates, III Edition, Oxford University Press. Young, J.Z 2004.
- Vertebrates; Comparative Anatomy, Function, Evolution Zoology McGraw Hill.
- Modern Text Book of Zoology: Vertebrates, Rastogi Publications.
- Biology of Chordates. Vishak Publishing Co. Nigam H.C, 2017.
- Chordata- I, Arora MP. Himalaya Pub House Co.
- Introduction to General Zoology (Vol. 2), Haki K C; Kundu G & Sarkar S. - NCBA, Kolkata.
- Analysis of Vertebrate Structure, Hilderbrand M, Gaslow GE., John Wiley and Sons Jordan EL,
- Chordate Zoology, Verma PS. 2003.S.Chand & Company Ltd. New Delhi.
- Comparative Anatomy of Vertebrates, Function and Evolution Kardong K V. 2005.; McGraw-Hill
- Vertebrates: Comparative anatomy, function Evolution, Kardong KV. 2002.. Tata McGraw Hill.
- Comparative anatomy of the Vertebrates. 9th Ed Kent GC, Carr RK. 2001. Mc Graw Hill.

Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoology
Gulbarga University, Kalaburagi-585106

Paper Code: ZT- 1	Paper Title: ZT- 1 Animal Systematics and Biology of Non-Chordates		
Duration of Exam	3 Hours	Max Marks 80	80
Instruction:	Answer all the sections(Equal distribution of Marks for all the Units)		

Section-A

Instructions • Answer all the sections • Draw diagram wherever necessary.	Marks
I. Answer all the following questions (10x2=20) 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	

Section-B

II. Answer any **Four** of the following questions	Marks (5X4=20)
13.	
14. 15. 16. 17.	

SECTION-C

III. Answer any FOUR of the following questions	**Marks (4X10=40)**
18. **19.** **20.** **21.** **22.**	

Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoolog
Gulbarga University, Kalaburagi-58510

Paper Code: **ZT- 2**	**Paper Title: ZT- 2 Animal Systematics and Biology of Chordates**		
Duration of Exam	**3 Hours**	Max Marks	**80**
Instruction:	**Answer all the sections(Equal distribution of Marks for all the Units)**		

Section-A

Instructions **1. Answer all the sections** **2. Draw diagram wherever necessary**	**Marks**
12.I. Answer all the following questions 1. 2. 3. 4. 5. 6. 7. 8. 9. 10	(10x2=20)

Section-B

II. Answer any **FOUR** of the following questions	**Marks (5X4=20)**
11. 12. 13. 14. 15. 16. 17.	

SECTION-C

III. Answer any FOUR of the following questions	**Marks (4X10=40)**
18. **19.** **20.** **21.** **22.**	

Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoolo
Gulbarga University, Kalaburagi-5851

Model Paper

GULBARGA UNIVERSITY, KALABURAGI

B. Sc. I SEMESTER (SEP)

ZOOLOGY PRACTICAL QUESTION PAPER - 2024-25

DSC- ZP-1
Animal Systematics and Biology of Non-Chordates

Time: 3 Hrs **Max. Marks: 40**

Q.I. Dissect and Display the _____ of Earthworm / Pila/ Starfish **08**

Q.II. 1. Identify, Classify & Give reasons _____ 10X2=**20**

2. Identify, Classify & Give reasons _____

3. Identify, Classify & Give reasons _____

4. Identify and Describe _____

5. Identify and Describe _____

6. Identify and Describe _____

7. Identify and Comment on _____

8. Identify and Comment on _____

9. Identify and Comment on _____

10. Identify, sketch and Label _____

Q.III. Preparation of temporary mount of Cockroach mouth parts/sting apparatus of honey bee. **05**

Q. IV. Viva-voce **03**

Q. V Certified Practical Record Book **04**

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Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoology
Gulbarga University, Kalaburagi-585106

Model Paper

GULBARGA UNIVERSITY, KALABURAGI

B. Sc. II SEMESTER (SEP)

ZOOLOGY PRACTICAL QUESTION PAPER - 2024-25

DSC- ZP-2

Animal Systematics & Biology of Chordates

Time: 3 Hrs **Max. Marks: 40**

Q.I.	Dissect and Display the ______________ of Shark / Rat.	**08**
Q.II.	1. Identify, Classify & Give reasons ______________	10X2=**20**
	2. Identify, Classify & Give reasons ______________	
	3. Identify, Classify & Give reasons ______________	
	4. Identify and Describe ______________	
	5. Identify and Describe ______________	
	6. Identify and Describe ______________	
	7. Identify and Comment on ______________	
	8. Identify and Comment on ______________	
	9. Identify and Comment on ______________	
	10. Identify, sketch and Label ______________	
Q.III.	Compare __________ of ______________ with __________	**04**
Q. IV.	Viva-voce	**03**
Q. V.	Certified Practical Record Book	**05**

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1)

2)

3)

4)

5)

Dr. K. Vijaykumar
Senior Professor & Chairman
Dept. of P.G. Studies & Research in Zoology
Gulbarga University, Kalaburagi-585106