

**JYOTI NIVAS COLLEGE AUTONOMOUS
SYLLABUS FOR 2018 BATCH AND THEREAFTER**

Programme: B.Sc.

Semester: IV

ZOOLOGY PAPER IV

HISTOLOGY, HUMAN ANATOMY AND COMPARATIVE ANATOMY

Course Code: 18IVZO4

No. of Hours: 60

COURSE OBJECTIVES:

- To understand the basic concepts of tissue architecture of mammalian organs.
- To understand the anatomy of man and appreciate the interrelatedness and interdependency of the organ systems
- To compare the anatomy of Chordates and to note their evolutionary trends.

LEARNING OUTCOMES:

- Students gain the knowledge of understanding the histological details of organs in health that will enable them to see the changes to these organs during disease
- Enhance their appreciation on the structure and functions of the human body that enables them to understand their own body better
- Enable students to understand the close relationship between the anatomy of various groups of chordates and hence the ability to trace their evolutionary connection

HISTOLOGY

8 HRS

UNIT I

Histological structure of the following mammalian organs:

Tongue, Stomach, Thyroid Gland, Adrenal Gland , Testis , Ovary, Kidney

HUMAN ANATOMY

19 HRS

UNIT II: GROSS ANATOMY OF ORGAN SYSTEMS – I

8 HRS

1. Unique human characteristics

1 HR

2. Digestive system.

3 HRS

3. Circulatory system

4 HRS

a) Gross structure of the heart

b) Arterial system

c) Venous system

d) lymphatic system

UNIT III: GROSS ANATOMY OF ORGAN SYSTEMS – II	6 HRS
1. Respiratory system	2 HRS
2. Excretory system	2 HRS
3. Reproductive system – male and female	2 HRS
UNIT 4: GROSS ANATOMY OF ORGAN SYSTEMS – III	5 HRS
1. Gross structure - Brain and spinal cord	3 HRS
2. Sense organs –Eye and ear	2 HRS
<u>COMPARATIVE ANATOMY</u>	33 HRS
UNIT V: COMPARATIVE ANATOMY – I	12 HRS
1. Integumentary system - Fish, Frog, Lizard, Pigeon and Rabbit	6 HRS
2. Evolutionary trends in the heart: Shark, Frog, Lizard, Pigeon and Rabbit.	6 HRS
UNIT VI: COMPARATIVE ANATOMY – II	10 HRS
1. Evolutionary trends in the aortic arches: Fish, Frog, Lizard Pigeon and Rabbit	5 HRS
2. Evolutionary trends in the respiratory system: Fish, Frog, Lizard Pigeon and Rabbit with special reference to modifications of the pharynx.	5 HRS
UNIT VII: COMPARATIVE ANATOMY III	11 HRS
1. Evolutionary trends in the Urinogenital system: Pronephros, Mesonephros and Metanephros.	5 HRS
2. Evolutionary trends in the structure of Brain: Shark, Frog, Pigeon and Rabbit	6 HRS

Practical IV

Histology, Human Anatomy and Comparative anatomy

DURATION: 3HRS/UNIT

NO. OF UNITS: 15

I HISTOLOGY:

7 UNITS

Histology - Mammalian organs:

- a) Small intestine, Liver, Pancreas, Thyroid Gland, Testis and Ovary
- b) Microtechnique: Staining of the prepared paraffin sections

II. HUMAN SKELETON

3 UNITS

Skull, vertebrae, girdles and limb bones (except bones of hand and feet)

III. COMPARATIVE ANATOMY

3 UNITS

- i) Scales - Fish (Placoid, Cycloid and Ctenoid); Mounting
- ii) Heart of Shark, Frog, Pigeon and Rat.
- iii) Brain of Shark, Frog, Pigeon and Rat.

Practical tests/repetition

2 UNITS

Note: 13 Practical + 2 units for practical tests/repetition

REFERENCES:

1. Kardong, K.V. (2005) Vertebrates' Comparative Anatomy, Function and Evolution. IVEdition. McGraw-Hill Higher Education.
2. Kent, G.C. and Carr R.K. (2000). Comparative Anatomy of the Vertebrates. IX Edition. The McGraw-Hill Companies.
3. Hilderbrand, M and Gaslow G.E. Analysis of Vertebrate Structure, John Wiley and Sons.
4. Walter, H.E. and Sayles, L.P; Biology of Vertebrates, Khosla Publishing House.
5. Ross and Wilson - Anatomy and Physiology in Health and Illness, 11th edition
6. Victor P Eroschenko (2005). Atlas of Histology, 10th Edition. CBS publishers.
7. Bevelander. G. (1970). Essentials of Histology, Mosby Company, Saint Louis.
8. Ullah M (1995) Histology and Genetics Kedarnath Ramnath Publications, Meerut.
9. Vimala C.M (2006) Introductory Zoology Vol V, Interline Publishing, Bangalore.
10. Copenhaver. W. M., Kelly D.E and Wood R.L, 1978, Bailey's Text Bokk of Histology, Williams and Wikins Company, Baltimore, 7th Edition. Asian Edition.
11. Wheater, Burkit and Daniels(1987) Functional Histology.