



**List of New Course(s) Introduced**

**Department : Zoology**

**Programme Name : M. Sc.**

**Academic Year : 2017-18**

**List of New Course(s) Introduced**

Sr. No.	Course Code	Name of the Course
01.	LZT 101	Comparative Anatomy of Vertebrates
02.	LZT 103	Reproduction and Developmental Biology

*A. V. K. Bhaskar*

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



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

**Academic Year : 2017-18**

**School : School of Studies of Life Sciences**

**Department : Zoology**

**Date and Time : July, 07, 2017- 09: 30 to 06:30 PM**

**Venue : Zoology Department**

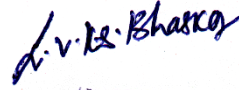
The scheduled meeting of member of Board of Studies (BoS) of Department of Zoology, School of Studies of Life Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur was held to design and discuss the M. Sc. (I to IV semesters) scheme and syllabi.

The following members were present in the meeting:

1. Prof. Renu Maheshwari (External Expert Member BoS, Dept. of Zoology, Raipur)
2. Dr. Monika Bhadauria (HOD, Associate Prof., Dept. of Zoology.-cum Chairman, BOS)
3. Dr. Seema Rai (Member BoS, Associate Professor, Dept. of Zoology)
4. Dr. Santosh Singh (Member, Assistant Professor, Dept. of Zoology)

**The committee discussed and approved the scheme and syllabi. The following new courses were introduced in the M. Sc. Zoology (I and II semester):**

Sr. No.	Course Code	Name of the Course
01.	LZT 101	Comparative Anatomy of Vertebrates
02.	LZT 103	Reproduction and Developmental Biology

  
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Signature & Seal of HoD





Department of Zoology, GGV, Bilaspur (CG)

SEMESTER I

**LZT 101: COMPARATIVE ANATOMY OF VERTEBRATES**

**Unit 1:** Origin of vertebrates, Integument and its derivatives: Structure of integument, scales, feathers, hair, beak, claw, nail, hoof, horn, antler, gland; Endoskeleton: General plan of neurocranium and dermatocranium, jaw suspensorium, vertebrae.

**Unit 2:** Digestive system: Modifications in relation to feeding habits; length and surface area, Internal folds, Supplementary diverticulae, accessory digestive glands, Oesophagus, Stomach; Dentition, dental formula in mammals.

**Unit 3:** Respiratory System: Aquatic respiration, Aerial respiration; Circulatory system: Heart, Aortic arches, Portal systems, Lymphatic system.

**Unit 4:** Nervous system: Evolution of cerebral hemispheres and cerebellum, Chemoreceptors, Neuromast organs of lower vertebrates, Cranial and spinal nerve.

**Unit 5:** Urinogenital system: Excretory system- Types and evolution of kidney tubules, Urinary duct and bladder, Reproductive system- General plan of gonads, Accessory reproductive organs.

Books Recommended

1. Hildebrand: Analysis of Vertebrate Structure (1995, John Wiley)
2. Kotpal: Modern Text Book of Zoology Vertebrates (2003, Rastogi)
3. Nigam: Biology of Chordates (1983, S Chand)
4. Romer & Parsons: The vertebrate Body (6<sup>th</sup> ed. 1986, Saunders)

Mouib  
27/7/17  
Head  
Department of Zoology  
Guru Ghasidas Vishwavidyalaya  
Bilaspur (C.G.)

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Anon.  
27/7/17

Sankar  
27/7/17





Department of Zoology, GGV, Bilaspur (CG)

**LZT 103: REPRODUCTION AND DEVELOPMENTAL BIOLOGY**

**Unit 1:** Reproduction Biology: Structure of mammalian testis and ovary; Spermatogenesis and structure of sperm; Oogenesis and structure of egg; Male and female accessory sex organs; Hormones of testis and ovary; Estrous and menstrual cycle; Hormones of pregnancy; Parturition; Hormonal control of lactation.

**Unit 2:** Fertilization and Development: Biochemical aspect of fertilization; penetration and activation of egg and early development; Fate maps; embryonic induction and differentiation. Gastrulation movements: role of egg cortex and cell surface in morphogenesis. Cell adhesion and cell communication. Hormonal control of metamorphosis in amphibians; Neuro endocrine control of insect metamorphosis; Biochemistry and mechanism of action of hormones during metamorphosis.

**Unit 3:** Organogenesis: Formation of organ rudiments, differentiation and development of heart and kidney in different mammals. Organizer, inductive tissue interactions in developments.

**Unit 4:** Nuclear transplantation: Cellular differentiation and protein synthesis; Differential activation; Developmental genetic defects and role of apoptosis in development.

**Unit 5:** Embryonic Nutrition: Nutritional requirements of Embryo; Modes of embryonic nutrition; Food reserve and embryonic nutrition; Embryonic nutrition from mother and physiology of placenta.

**Reference Books:**

1. Mac Hadley. 1992: Endocrinology, 3rd Edition. Prentice - Hall Inc. A Simon & Schuster Company, Englewood Cliffs, New Jersey. USA.
2. Turner, C.D. and J.T. Bangara: 1986. General endocrinology. Saunders International Student edition. Toppan Company Limited. Tokyo.
3. Chandra S Negi: Introduction to Endocrinology. 2009. Prentice Hall India Learning Private Limited.
4. Balinsky, B.I: 1981 An Introduction to Embryology. W.B Saunders Co., Philadelphia.
5. Karp, G. and Berrill, N.J.: 1981. Development. McGraw Hill, New York.
6. Saunders, J.W.: 1982. Developmental Biology. MacMillan Co., London.
7. Gilbert, S.F.: 2003. Developmental Biology. Sinauer Associates Inc. Sunderland, Massachusetts, U.S.A.
8. Oppenheimer, S.B.: 1980. Introduction to Embryonic Development. Allyn and Bacon, Inc. U.S.A.

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Moh

SP

Srinivas Singh  
27/2/12