



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

B.Sc. (Life Science / Biotechnology / Chemistry)

BSLS 402 Anatomy, Physiology and Developmental Biology of Mammals

COURSE CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSLS 402	DC	Anatomy, Physiology and Developmental Biology of Mammals	60	20	20	60	20	4	1	2	7

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

*Teacher Assessment shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

1. To study the morphology and physiology of mammals
2. To study the developmental stages of mammals

Course Outcomes:

1. Students will be able to understand the structure and functions of various organs of mammals
2. Students will be able to understand the stages of development of mammals

Unit-I

Digestive system of mammals: Secretory function of alimentary canal. Digestion and absorption of Carbohydrates, Lipids and Proteins.

Excretory System of Mammals: Formation of urea (Ornithine cycle) and Urine (Glomerular filtration, Tubular secretion and Selective re-absorption).

Unit-II

Respiratory system of mammals: Mechanism of respiration, transport of oxygen and carbon dioxide by blood.

Circulatory system of mammals: Course of blood circulation. Composition and functions of blood; blood clotting.

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Unit-III

Muscular system of mammals: Types, structure and functions of muscles. Muscle contraction. Nervous system of mammals: Structure of nervous tissue. Mechanism of nerve impulse transmission.

Unit-IV

Reproductive system of mammals: Structure of male and female reproductive organs. Female reproductive cycles (Menstrual cycle and oestrous cycle).

Unit-V

Gametogenesis (Spermatogenesis and oogenesis). Fertilization; mechanism of fertilization and its significance. Types and patterns of cleavage. Process of blastulation and formation of germinal layers. Extra embryonic membranes and placentation in mammals.

BSPLSL 405 Practical:

- 1) Histological slides and charts/models related to:
A] Digestive system, B] Excretory system, C] Respiratory system, D] Circulatory System
E] Muscular system, F] Nervous system, G] Reproductive system, H] Developmental biology.
- 2) Haematological experiments:
A] Blood grouping B] Differential count of R.B.C and W.B.C.
C] Clotting time and Bleeding time D] Estimation of hemoglobin.
- 3) Developmental stages of chick embryo.

Books:

1. Chordate Zoology and Elements of Animal Physiology, By Jaurdan, E.L. and Verma, P.S., S. Chand & Company Ltd, New Delhi.
2. An Introduction to Embryology, Balinsky, B.I. Saunders Co. USA.
3. Human reproductive and Developmental Biology, Bagley, D.J, Frith, J.A. and Hoult, J.R.S. Mac Millan Press, London.
4. A text Book of Comparative Endocrinology, Gorbman, A and Bern, H.A.: Willy Estern, New Delhi.
5. Developmental Biology, Virbala Rastigi.
6. Animal Physiology - Sobti, R.C., Narosa Publishing House