

M.Sc. Zoology	BoS approved and recommend that the student from Interstream subjects, seeking admission to PG program, needs to be appearing GU-ART. Syllabus for the prequalifying test for the Interstream students seeking admission in PG program. (Annexure I)
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The meeting ended with thanks to the chair.

Sd/-
(Prof. K.R.S. Priolkar)
Chairperson

[\(Back to Index\)](#) [\(Back to Agenda\)](#)

Dept. of Zoology, Goa University

**Syllabus for interstream students seeking admission to M.Sc. ZOOLOGY
(prequalifying Screening)**

ANATOMY OF VERTEBRATES

Skeletal System and Integumentary system of vertebrates; Respiratory system of Fish and Mammals; Circulatory System, Portal circulation – Hepatic & Renal portal circulation; Excretory System: Types of Kidneys, structure and function of nephron; Nervous system: Central Nervous System, Peripheral nervous system and Autonomic nervous system.

PHYSIOLOGY OF MAMMALS

Haematology; Physiology of Circulation; Respiratory Physiology, Importance of Respiratory pigments; Contraction and Movement: Structural and functional properties of muscles, physiological basis of muscle contraction; Physiology of Digestion, role of hormones in digestion; Excretion: Types of nitrogenous waste, urea cycle; Nervous system: Neural Co ordination; Physiology of Reproduction with special emphasis on menstrual cycle.

BIOCHEMISTRY

Structure, Function and Classification of Biomolecules: Carbohydrates, Proteins, Lipids, Nucleic acids and Vitamins, Concept of metabolism; Concept of free energy, Enzymes kinetics: Michaelis-Menton equation, Enzyme activators, inhibitors (reversible and irreversible), coenzymes and isoenzymes.

ENDOCRINOLOGY

All the endocrine glands structure and function, endocrine regulation of physiological process, hormones: classification and regulation of hormonal secretion.

DEVELOPMENTAL BIOLOGY

Theories of development and differentiation; Gametogenesis; Fertilization and Post fertilization events; Cleavage, Gastrulation, Fate maps and Cell lineage; embryonic inductions, concept of organiser and competence, Early Development of Chick; Extra embryonic membranes of chick, Placenta and placentation; Regeneration and ageing.

GENETICS

Basics of genetics, concept of gene and inheritance, Epistasis and hypostasis, multiple alleles, Sex Determination, Sex related Inheritance, Pedigree analysis, Genetic disorders dominant and

recessive, Inheritance of Human traits, Mutations and chromosomal aberrations, Genetic engineering.

Recommended Books:

1. Kardong K (2011), Vertebrates: Comparative Anatomy, Function and Evolution, Sixth edition, McGraw-Hill Companies, USA.
2. Kent CG and Carr R (2000), Comparative Anatomy of Vertebrates, Ninth Edition, McGraw-Hill Companies, USA.
3. Moyces C and Schulte P (2013), Principles of Animal Physiology, Second Edition, Pearson International Edition, USA.
4. Schmidt-Nielsen K (2001), Animal Physiology: Adaptation and Environment, Fifth Edition, Cambridge University Press.
5. Nelson DL and Cox MM (2010), Lehninger's Principles of Biochemistry, Freeman WH and Co, USA.
6. Berg J, Tymoczko J and Stryer L (2002), Biochemistry, W H Freeman and Company, New York.
7. Bolander FF (2004), Molecular Endocrinology, Elsevier, UK.
8. Hadley ME and Levine JE (2006), Endocrinology, Adeson-Wesley publication, USA.
9. .Gilbert SF (2013), Developmental Biology, 10th edition, Sinauer Associates Inc., Sunderland, USA.
10. Carlson BM (2003), Pattern's Foundation of Embryology, Mc Graw Hill Inc., USA.
11. Klug WS, Cummings MR, Spencer C and Palladino MA (2008), Concepts of Genetics, 9th edition Publisher-Benjamin Cummings.
12. Hartl DL and Jones EW (2004), Genetics: Analysis of Genes and Genomes, 6th edition Jones & Bartlett Publishers, Boston, USA.

[\(Back to Index\)](#) [\(Back to Agenda\)](#)