

# Department of Zoology

## Amar Singh College Srinagar

### Course Specific Learning objectives of Zoology:

Course	Objectives
<b>Sem I</b> <b>Course Title: Animal Diversity</b>	<p>To understand the Animal diversity around us.</p> <p>To understand the underlying principles of classification of animals.</p> <p>To understand the terminology needed in classification.</p> <p>To understand the differences and similarities in the various aspects of classification.</p> <p>To classify invertebrates and to be able to understand the possible group of the invertebrate observed in nature.</p> <p>Knowledge of classification of chordates.</p> <p>Characteristics and Outline Classification of Protochordata</p> <p>Characteristics and Outline of Classification of Origin of Chordata</p> <p>Characteristics and Outline Classification of Pisces and Amphibia</p> <p>Characteristics and Outline Classification Reptiles and Aves</p> <p>Characteristics and Outline Classification of Mammalia</p>
<b>Sem II</b> <b>Course title : Vertebrate Comparative Anatomy and Embryology</b>	<p>Describe the anatomy of Integumentary System</p> <p>Describe the anatomy of Digestive System</p> <p>Describe the anatomy of Circulatory and Respiratory Systems</p> <p>Describe the anatomy of Urogenital System</p> <p>Describe the anatomy of Neuro-endocrine System</p> <p>Develop the basic concepts of</p>

	<p>development</p> <p>Explain the fundamental concept of embryogenesis</p> <p>Explain the fundamental concept of Organogenesis</p> <p>Describe the developmental model systems- invertebrates</p> <p>Describe the developmental model systems- vertebrates</p>
<p><b>Sem III</b></p> <p><b>Course title : Animal Physiology and Biochemistry</b></p>	<p>Develop understanding for the fundamental concepts of physiology of digestion</p> <p>Develop understanding of blood vascular system</p> <p>Develop the fundamental concepts of physiology of respiration</p> <p>Familiarize students with renal physiology and muscle</p> <p>Develop basic understanding of endocrine system and its interactions with other systems</p> <p>Fundamental concept of bioenergetics in cellular processes</p> <p>Describe the structure of amino acids and proteins</p> <p>Describe the structure and function of enzymes</p> <p>Describe the structure of carbohydrates</p> <p>Describe the structure of lipids and nucleic acids</p>
<p><b>Sem IV</b></p> <p><b>Course title : Genetics and Evolution</b></p>	<p>Explain Mendalism expanding Mendel's Laws</p> <p>Describe gene action</p> <p>Describe mutation, mutagenesis and repair</p> <p>Explain sex determining systems and dosage compensation</p> <p>Explain the process of gene expression and applications</p> <p>Describe the fundamental concept of DNA Replication</p> <p>Describe the fundamental concept of Transcription</p> <p>Explain the molecular events in Translation</p> <p>Describe the types of Posttranslational modifications (PTM)</p> <p>Describe Gene Regulation and structure</p>

	<p>and function of Transposons</p> <p>Trace the Origin of life</p> <p>Established theories of evolution</p> <p>Correlate the theories with the evidences</p> <p>Explain the genetic basis of evolution</p> <p>Describe zoogeography</p>
<p><b>Sem V</b></p> <p><b>Course title : Animal Biotechnology</b></p>	<p>Attain knowledge about the history, branches and scope of biotechnology and gene transfer technique.</p> <p>Understand the recombinant technology, gene integration into the vector and with host genome and creation of transgenic animals.</p> <p>Attain knowledge about in-vitro fertilization and embryo transfer</p> <p>Understand the principle and applications of biotechnology techniques – DNA finger printing, blotting technique, PCR, DNA sequencing, micro array.</p> <p>Attain knowledge about the production of pharmaceuticals through biotechnology.</p> <p>Attain knowledge about growth media.</p> <p>Attain knowledge about culturing of microorganisms</p> <p>Describe the process of gene therapy, production of insulin and growth hormone by recombinant DNA technology</p>
<p><b>Sem VI</b></p> <p><b>Course title : Immunology</b></p>	<p>Describe the evolution of immunology, historical perspective</p> <p>Describe the fundamental concept of Innate and adaptive immunity</p>

	<p>Develop the basic concepts of Antigenicity and immunogenicity</p> <p>Describe the molecular structure and function of major histocompatibility complex</p> <p>Attain knowledge about the processing of antigens.</p> <p>Understand the concept of cytokines and complement system</p> <p>Describe the types of hypersensitivity and mechanism of tolerance.</p> <p>To attain knowledge about vaccines and their mechanism of function.</p> <p>To know about autoimmune disorders and immunodeficiency.</p>
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