

Department of Zoology
Amar Singh College Srinagar

Course Specific Learning objectives of Zoology:

Course	Objectives
<p>Sem I Course Title: Animal Diversity</p>	<p>To understand the Animal diversity around us. To understand the underlying principles of classification of animals. To understand the terminology needed in classification. To understand the differences and similarities in the various aspects of classification. 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 Characteristics and Outline of Classification of Origin of Chordata Characteristics and Outline Classification of Pisces and Amphibia Characteristics and Outline Classification Reptiles and Aves</p> <p>Characteristics and Outline Classification of Mammalia</p>
<p>Sem II Course title : Vertebrate Comparative Anatomy and Embryology</p>	<p>Describe the anatomy of Integumentary System Describe the anatomy of Digestive System Describe the anatomy of Circulatory and Respiratory Systems Describe the anatomy of Urogenital System Describe the anatomy of Neuro-endocrine System 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>Sem III Course title : Animal Physiology and Biochemistry</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>Sem IV Course title : Genetics and Evolution</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 Trace the Origin of life Established theories of evolution Correlate the theories with the evidences Explain the genetic basis of evolution Describe zoogeography</p>
<p>Sem V Course title : Animal Biotechnology</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>Sem VI Course title : Immunology</p>	<p>Describe the evolution of immunology, historical perspective 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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