

**KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

*Re-accredited by NAAC with 'A+' Grade (4th Cycle)*

*College of Excellence (UGC)*

*31<sup>st</sup> Rank among colleges in NIRF 2022, Affiliated to Bharathiar University*

*Coimbatore – 641 029.*

**DEPARTMENT OF ZOOLOGY (Aided)**

**COURSE OUTCOMES (CO) OF**

**M.Sc. ZOOLOGY**

**For the students admitted**

**In the Academic Year 2021-2022**

**Sub. Code: 21PZO101**

<b>Programme code : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 1. Comparative Anatomy of Invertebrata and Chordata			
Batch 2021-2022	Hours/ Week 5	Total Hours 75	Credits 5

**Course Objectives**

1. To make the students learn the functional morphology of invertebrates and chordates.
2. To impart the significance of Invertebrate and Chordate organization and their evolving adaptations in organ systems.
3. To understand the functional aspects of different systems of invertebrates and vertebrates in a comparative basis.

**Course Outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Remember the organization, significance and evolving adaptations of coelom in Invertebrates.
	<b>CO2</b>	Understand the processes and mechanisms of digestive system, respiratory and excretory systems of invertebrates.
	<b>CO3</b>	Apply the concept of circulatory, nervous and reproductive systems in Invertebrates.
	<b>CO4</b>	Analyze the physiological functions of integument, digestive, respiratory and skeletal system of vertebrates.
	<b>CO5</b>	Evaluate the comparative anatomy of circulatory, nervous and urinogenital system of vertebrates.

**Sub. Code: 21PZO102**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 2. Animal Physiology			
Batch 2021-2022	Hours / Week 5	Total Hours 75	Credits 5

**Course Objectives**

1. To get knowledge about the structure and functions of various systems
2. To understand the physiology of digestion, respiration, circulation and muscle fibres.
3. To study the structure and functions of endocrine glands.

**Course Outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Know the importance of nutrients and digestion.
	<b>CO2</b>	Understand the physiology of respiration and circulation.
	<b>CO3</b>	Impart knowledge on the role of renal organs in excretion.
	<b>CO4</b>	Describe the muscle structure and function.
	<b>CO5</b>	Evaluate the students reproductive and endocrine glands.

**Sub. Code: 21PZO103**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core paper 3. Cell and Molecular Biology			
Batch 2021-2022	Hour/Week 5	Total Hours 75	Credits 5

**Course Objectives**

1. To study the cell membrane, cytoskeleton structure, nucleus and their functions.
2. To impart knowledge on protein synthesis.
3. To include knowledge on the cell cycle, apoptosis, programmed cell death and cancer biology.

**Course Outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Get the knowledge about cell organelles and their functions
	<b>CO2</b>	Understand the various functions adapted inside the cells.
	<b>CO3</b>	Apply knowledge on molecular mechanisms of protein synthesis
	<b>CO4</b>	Describe the cell cycle, cell signaling pathways of cell death
	<b>CO5</b>	Evaluate the knowledge on the cancer biology and molecular mechanism of cancer treatment

**Sub. Code: 21PZO204**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 4. Microbiology and Immunology			
Batch 2021-2022	Hour/Week 5	Total hours 75	Credit 4

**Course objectives**

1. To aware the knowledge of microorganisms in water, soil, sewage and human body and
  1. sterilization techniques
2. To observe the importance of microorganisms in agriculture, food processing and medicine
3. To inculcate the basic knowledge of immunology and disorders in human being

**Course outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Outline the classification, importance and application of microorganisms
	<b>CO2</b>	Observe the role of microorganisms on food processing, environment, microflora on human health and disinfection methods
	<b>CO3</b>	Illustrate the students pathology and microbial response.
	<b>CO4</b>	Analyse the techniques for the infectious disease diagnosis
	<b>CO5</b>	Make awareness of immunity and immune response.

**Sub. Code: 21PZO205**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 5. Molecular Genetics			
Batch 2021 -2022	Hours / Week 5	Total Hours 75	Credits 4

**Course Objectives**

1. To get knowledge about the components of genetic material.
2. To know about genome and their role in inheritance
3. To understand the relation between genes and diseases.

**Course Outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Get knowledge about the structure, organization and functions of genetic materials.
	<b>CO2</b>	Understand the expression, regulation and mutation of gene.
	<b>CO3</b>	Apply the knowledge on the role of genes in heritability and its measurements
	<b>CO4</b>	Analyze the importance of viral oncogenes, regulation of gene expression and signal transduction by oncoproteins.
	<b>CO5</b>	Evaluate the knowledge on inheritance, gene mapping and genetic disorders.

**Sub. Code: 21PZO206**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 6. Biostatistics and Research Methodology			
Batch 2021-2022	Hours / Week 5	Total Hours 75	Credits 4

**Course Objectives**

1. To Create awareness on collection, analysis of data and interpretation of results.
2. To Describe the statistical methods and probability distribution relevant for Molecular data analysis
3. To know the methodology of research and skill development for report writing.

**Course Outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Describe the tools of Biostatistics and Bioinformatics
	<b>CO2</b>	Understand the data collection methods, test of significance and the Biological databases
	<b>CO3</b>	Apply the knowledge in Biostatistics and Bioinformatics tools to analyse the Biological data
	<b>CO4</b>	Analyze the various techniques in the biological research
	<b>CO5</b>	Evaluate the knowledge on identifying the research problems, interpretation and reporting

**Sub. Code: 21PZO2CL**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Practical I. Comparative Anatomy of Invertebrates and chordates, Animal Physiology and Cell and Molecular Biology			
Batch 2021-2022	Hours / Week 5	Total Hours 150	Credits 3

**Course Objectives**

1. To acquire knowledge on the morphological features of Invertebrates and chordates
2. To determine the physiological action in relation to temperature, pH and osmotic pressure.
3. To gain practical knowledge about primary metabolites and its estimation in higher organisms.

**Course Outcomes**

<b>K3 to K5</b>	<b>CO1</b>	Get knowledge about the role of morphological features of invertebrates and chordates.
	<b>CO2</b>	Understand about the physiological changes in relation to temperature, pH and Osmotic Pressure.
	<b>CO3</b>	Apply the practical knowledge on Animal Physiology, Cell and Molecular Biology and Molecular Genetics techniques.
	<b>CO4</b>	Analyze the knowledge on primary metabolites in higher organisms.
	<b>CO5</b>	Evaluate the student's knowledge on physiological and Cell and Molecular Biology parameters.



**Sub. Code: 21PZO2CM**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Practical II. Microbiology and Immunology, Molecular genetics, Biostatistics and Research Methodology			
Batch 2021-2022	Hours / Week 5	Total Hours 150	Credits 3

**Course Objectives**

1. To gain knowledge on microbial culture techniques and importance of immune system response.
2. To apply the molecular genetic techniques and its applications in biology.
3. To acquire knowledge on the importance of statistics, interpretation of the biological data and report writing.

**Course Outcomes (CO)**

<b>K3 to K5</b>	<b>CO1</b>	To understand knowledge on various microbial cultural techniques.
	<b>CO2</b>	To acquire knowledge on immuno techniques.
	<b>CO3</b>	To apply the practical knowledge on Molecular Genetics techniques.
	<b>CO4</b>	To analyse the knowledge on data collection.
	<b>CO5</b>	To interpret and evaluate the data using statistical tool.

**Subject Code: 21PZO307**

<b>Programme code : 06</b>	<b>M. Sc., Zoology</b>		
Core Paper 7. Entomology			
Batch 2021-2022	Hour/Week 5	Total hours 75	Credit 5

**Course objectives**

1. To enrich information about the taxonomic position of Insects.
2. To inculcate knowledge on morphology, anatomy, and physiology of insects.
3. To upgrade knowledge about the economics of beneficial insects, pests of agriculture, stored grain pests and their control measures.

**Course outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Classify insects up to order
	<b>CO2</b>	Understand the anatomy and physiology of Insects.
	<b>CO3</b>	Apply the knowledge on physiology, reproduction biology and Endocrine system of insects.
	<b>CO4</b>	Analyze the economics of beneficial insects.
	<b>CO5</b>	Provide knowledge about the control and management measures of Insect pests.

**Sub. Code: 21PZO308**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 8. Evolution			
Batch 2021-2022	Hours / Week 5	Total Hours 75	Credits 5

**Course Objectives**

1. To understand the evolutionary significance.
2. To understand the concept and mechanisms of Evolution.
3. To study the various phyletic evolution and adaptive radiation

**Course Outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Understand the significance of Evolution
	<b>CO2</b>	Knowledge on Evolution process
	<b>CO3</b>	Apply the methods of calculating Zoological Time Scale
	<b>CO4</b>	Analyze the comparative anatomy and physiological systems evolution
	<b>CO5</b>	Evaluate the student's to acquire knowledge on evolution process

**Sub. Code: 21PZO309**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 9. Developmental Biology			
Batch 2021-2022	Hour/Week 5	Total hours 75	Credit 5

**Course objectives**

1. To learn about the developmental stages of an embryo.
2. To obtain the knowledge of fertilization and differentiation of mammals.
3. To understand the organogenesis, nutrition, regeneration and teratogenesis of mammals

**Course outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Explain about the spermatogenesis oogenesis and ovulation in human
	<b>CO2</b>	Explain the mechanism of fertilization, metabolic activities and molecular changes in cleavage process in human
	<b>CO3</b>	Distinguish various organs and physiology of Human
	<b>CO4</b>	Experiment the mechanism of induction, major events during regeneration and teratogenesis
	<b>CO5</b>	Assess the knowledge on embryonic nutrition

**Sub. Code: 21PZO410**

<b>Programme Code: 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 10. Environmental Biology and Toxicology			
Batch 2021-2022	Hours / Week 5	Total Hours 75	Credits 4

**Course Objectives**

1. To create awareness about the environmental quality and monitoring.
2. To obtain information about various toxicants and their impacts in the environment.
3. To enrich the students on environmental quality measures and environmental laws.

**Course Outcomes (CO)**

<b>K1 to K5</b>	CO1	Explain the biosphere.
	CO2	Understand the various types of pollutants, their impacts on the terrestrial and aquatic environment, animals and human beings, and control and management measures.
	CO3	Explain the energy flow, natural resources and their conservation.
	CO4	Analyse the knowledge in monitoring the quality of the environment and to promote bioremediation. Analyze and evaluate the toxicity of pollutants on living organisms.
	CO5	Evaluate the quality management and awareness of the environment.

**Sub. Code: 21PZO411**

<b>ProgrammeCode : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 11. Aquaculture			
Batch 2021-2022	Hour/Week 5	Total hours 75	Credit 4

**Course Objectives**

1. To explore the aquatic resources of the edible and economically important organisms.
2. To make use of the inland waters and marine potential to substitute the protein requirements by the human population.
3. To provide self employment opportunities and knowledge for students.

**Course Outcomes (CO)**

<b>K2 to K5</b>	<b>CO1</b>	Get knowledge about the production of cultivable candidate fish species
	<b>CO2</b>	Understand the global, national, traditional and modern techniques related to fishes for food security
	<b>CO3</b>	Apply practical knowledge into the aquaculture field to enhance production level
	<b>CO4</b>	Analyze students theoretical and technical knowledge useful for teaching, research, extension and entrepreneurship in the field of Aquaculture
	<b>CO5</b>	Evaluate the students theoretical and technical knowledge useful for teaching, research, extension and entrepreneurship development.

**Sub. Code: 21PZO412**

<b>Programme code : 06</b>	<b>M.Sc., Zoology</b>		
Core Paper 12. Endocrinology			
Batch 2021-2022	Hours/ Week 5	Total Hours 75	Credits 4

**Course Objectives**

1. To make the students learn the objectives and scope of Endocrine system.
2. To understand the general principles of endocrinology.
3. To get knowledge about the structure and functions of various endocrine glands and its hormones.

**Course Outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Acquire knowledge of the hormones and its role in coordination of activities in the biological systems.
	<b>CO2</b>	Understand the structure and functions of pituitary glands.
	<b>CO3</b>	Apply the knowledge on physiological mechanism of Thyroid, parathyroid and its role in metabolism.
	<b>CO4</b>	Analyze the hormonal regulation of Adrenal glands and pancreas.
	<b>CO5</b>	Evaluate the hormonal control of reproductive cycles.

**Sub. code: 21PZO4CN**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Practical. III. Entomology, Evolution and Developmental Biology			
Batch 2021-2022	Hours / Week 5	Total Hours 150	Credits 3

**Course Objectives**

1. To learn the morphology, anatomy and physiology of Insects and its role in crop production.
2. To explore and understand the evolutionary significance of different animals.
3. To study the developmental stages of embryos in animals.

**Course outcomes (CO)**

<b>K3 to K5</b>	<b>CO1</b>	To study the taxonomy of Insects and their importance, evolutionary significance in animal kingdom and the basic concepts of embryo development.
	<b>CO2</b>	To familiarise the methods adopted to identify the insects
	<b>CO3</b>	Acquire the knowledge on pest control practices and the importance of beneficial insects in crop production.
	<b>CO4</b>	Analyse the process of embryo development and chromosomal analysis during the development of embryos. Understand the evolution of Human.
	<b>CO5</b>	Evaluate the impact of different insects on crop production and influence of various factors on development of embryos. Exploring the different species of animal group in the museum.



**Sub. Code: 21PZO2CO**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Core Practical IV. Environmental Biology and Toxicology, Endocrinology, Aquaculture			
Batch 2021-2022	Hours / Week 5	Total Hours 150	Credits 3

**Course Objectives**

1. To observe the quality of the water and soil.
2. To study the biological importance of endocrine glands in vertebrates.
3. To know the toxicity testing methods and students to Pollution Control Board and wetlands.

**Course Outcomes (CO)**

<b>K3 to K5</b>	<b>CO1</b>	Get knowledge in determining the physical characteristics of the water and soil.
	<b>CO2</b>	Understand the importance of endocrine glands in vertebrates.
	<b>CO3</b>	Apply the toxicity of pollutants on animals and to expose the students in the field study.
	<b>CO4</b>	Analyse the qualitative analysis of pollution indicator organisms in aquatic environment.
	<b>CO5</b>	Evaluate the water quality parameters in wetlands.

**Sub. Code: 21PZO4Z1**

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Project Work and <i>Viva - Voce</i>			
Batch 2021-2022	Hour/Week 2	Total hours 60	Credit 2

**Course Objectives**

1. To acquire the basic knowledge about research and carry out research problems in the field of zoology.
2. To explore the ability to plan, carryout innovation in project
3. To improve the knowledge on various research methods in zoology

**Course Outcomes**

<b>K3 -K5</b>	<b>CO1</b>	Use foundational practical knowledge to carry out research in the specified area.
	<b>CO2</b>	Understand the techniques to be used to carry out the specific research work.
	<b>CO3</b>	Apply the learned techniques to carry out the experiments and obtain the result.
	<b>CO4</b>	Analyse the result by using biostatistical tools and interpret the result.
	<b>CO5</b>	Evaluate the analysed result and conclude the study and highlight its significant outcome

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Major Elective 1. Biophysics and Bioinformatics			
Batch 2021-2022	Hour/Week 5	Total hours 75	Credit 5

### Course Objectives

1. To study the principle of biophysics, principles and working mechanism of bioinstruments.
2. To understand the role of instruments in biological research.
3. To Acquire the knowledge on the Biological databases and learn the impact of bioinformatics tools on molecular structure prediction and drug discovery

### Course Outcomes (CO)

<b>K1 to K5</b>	<b>CO1</b>	Explain the principles and application of various instruments for biological Science.
	<b>CO2</b>	Understand the Knowledge on applications of instruments
	<b>CO3</b>	Apply the application knowledge on various instruments
	<b>CO4</b>	Analyse the various biological databases and its impact on molecular structure prediction
	<b>CO5</b>	Discuss the significance of Biostatistics and Bioinformatics tools in the biological data analysis and molecular structure prediction and drug discovery

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Major Elective 2. Wild Life Ecology and Management			
Batch 2021-2022	Hour/Week 5	Total hours 75	Credit 5

### Course objectives

1. To understand and appreciate biodiversity and the Act to protect the wild species.
2. To learn different techniques to study wildlife and develop knowledge of the benefits of the ecosystem.
3. To get knowledge about various methods to conserve biodiversity.

### Course Outcome

<b>K1 - K5</b>	<b>CO1</b>	Discuss the various components of an ecosystem.
	<b>CO2</b>	Understand the wildlife management in India and National Parks and Sanctuaries.
	<b>CO3</b>	Describe the Biodiversity hotspots, Endangered species and their Protection
	<b>CO4</b>	Analyse the importance of ecosystem services in the environment.
	<b>CO5</b>	Evaluate the Wild life management Techniques and animal plant interaction.

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Major Elective 3. Animal Parasitology			
Batch 2021-2022	Hour/Week 5	Total hours 75	Credit 5

### Course Objectives

1. To inculcate knowledge about parasitic infectious diseases.
2. To impart knowledge on protozoan and helminth parasitology.
3. To enrich the knowledge on vector biology, immunology, genetics and molecular biology of parasites.

### Course Outcomes

<b>K1 TO K5</b>	<b>CO1</b>	Discuss the role of parasites and their role in transfer of diseases
	<b>CO2</b>	Understand the common parasitic diseases and life threatening conditions caused by parasites.
	<b>CO3</b>	Apply knowledge to study the common parasitic diseases and life threatening conditions caused by helminths as regards etiology and life cycle of parasites of medical importance.
	<b>CO4</b>	Analyze the common diseases caused by arthropods of medical interest as regards etiology, pathogenesis.
	<b>CO5</b>	Illustrate the immunological and molecular methods used for diagnosis of parasitic infections.

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Major Elective 4. Poultry Science Management			
Batch 2021-2022	Hour/Week 5	Total hours 75	Credit 5

### **Course objectives**

1. Make the students to develop knowledge on the history and the role of poultry in rural development and its structure.
2. Students can learn the methods of rearing, breeding and production of poultry.
3. Get the knowledge about the preparation of feed antibiotics, vaccines and marketing.

### **Course Outcomes**

<b>K1 -K5</b>	<b>CO1</b>	Get the knowledge about the importance of poultry farming
	<b>CO2</b>	Understand the types of poultry breeding
	<b>CO3</b>	Apply the knowledge in types of incubators for poultry breeding
	<b>CO4</b>	Analyze the importance of poultry marketing
	<b>CO5</b>	Evaluate the advanced methodology in the poultry management

<b>Programme Code : 06</b>	<b>M.Sc., Zoology</b>		
Non Major Elective 1. Nutrition and Dietetics			
Batch 2021-2022	Hour/Week 3	Total hours 45	Credit 3

### Course objectives

1. To study nutrition for the better health/life.
2. To study nutritional need for different age groups.
3. To create awareness about different Nutrition dietetic organization/ industries.

### Course outcomes

<b>K1 to K5</b>	<b>CO1</b>	Describe the nutrition, dietetics and health to the children, adolescents, adults and their families.
	<b>CO2</b>	Understand the patho-physiology of children, adolescents and adults diseases and nutrition modification
	<b>CO3</b>	Apply the effective strategies to engage population in promotion of nutritional well being
	<b>CO4</b>	Analyse the food science knowledge to describe the function in maintaining health.
	<b>CO5</b>	Evaluate the nutritional knowledge to the public through health organization

<b>Programme code : 06</b>	<b>M.Sc., Zoology</b>		
Non Major Elective 2. Clinical Laboratory Techniques			
Batch 2021-2022	Hour/Weeks 3	Total hours 45	Credits 3

### Course Objectives

1. Understand about clinical laboratory techniques.
2. To familiarize technical knowledge on various laboratory instruments.
3. To analyze physiochemical parameters of samples by using laboratory instruments.

### Course outcomes (CO)

<b>K1 to K5</b>	<b>CO1</b>	Describe the clinical laboratory techniques
	<b>CO2</b>	Demonstrate about the various laboratory instruments
	<b>CO3</b>	Understanding sample preservation methods
	<b>CO4</b>	Estimation of samples in the laboratory
	<b>CO5</b>	Prepare report based on the sample analysis



<b>Programme Code: 06</b>	<b>M.Sc., Zoology</b>		
Non Major Elective 3 - Nano-Biotechnology			
Batch 2021-2022	Hours / Week 3	Total Hours 45	Credits 3

### Course Objectives

1. To enhance the basic knowledge on nanoparticle synthesis and its application in agriculture..
2. To enrich nano-technological knowledge on DNA, Proteins, Nucleic acids, drug delivery and biomedicine.
3. To apply knowledge on risk assessment of nano products in environmental and health issues.

### Course Outcomes (CO)

<b>K1 to K5</b>	<b>CO1</b>	Outline the fundamentals of nanotechnology and nanoparticles
	<b>CO2</b>	Understand the knowledge about bio-nano-materials, synthesis and its characterizations.
	<b>CO3</b>	Apply the various applications of bio-nano materials in different field applications like agriculture and medicine.
	<b>CO4</b>	Analyze the significance of bio-nano-materials to enhance the treatment of various diseases and enhancement of agriculture through nanomaterial's.
	<b>CO5</b>	Evaluate nano-technological knowledge on environmental and health issues.

<b>Programme code : 06</b>		<b>M.Sc., Zoology</b>	
Non Major Elective Paper 4 - Human Genetics and Counselling			
Batch 2021-2022	Hour/Week 3	Total hours 45	Credit 3

### Course objectives

1. To Understand knowledge on the blood types, transfusion and diseases.
2. To know about the role of amniocentesis in Prenatal Diagnosis, dermatoglyphics and Population genetics.
3. To learn the applications of Genetic engineering and Genetic counseling

### Course outcomes (CO)

<b>K1 to K5</b>	<b>CO1</b>	Describe the types, physiology and genetics of blood groups.
	<b>CO2</b>	Understand the importance of prenatal genetic diagnosis and role of dermatoglyphics in criminology.
	<b>CO3</b>	Apply the Hardy Weinberg principle in human genetics.
	<b>CO4</b>	Analyze the applications of genetic engineering in medicine.
	<b>CO5</b>	Discuss the values of genetic counselling and pedigree chart analysis in human life.

<b>Programme Code : 06</b>	<b>M.Sc, Zoology</b>		
EDC- Entrepreneurial Opportunity in Sericulture			
Batch 2021-2022	Hours / Week 2	Total Hours 30	Credits 2

### Course Objectives

1. To inculcate the Entrepreneurship and capacity building among the students
2. To train the people from low economic back ground so as to take sericulture as a prosperous avocation
3. To give knowledge about the mulberry cultivation and silk worm rearing techniques. The students will know about the laws and by laws governing keeping silk moth.

### Course Outcomes (CO)

<b>K1 to K5</b>	<b>CO1</b>	Explore the expert manpower to handle the sericulture units/corporate sector
	<b>CO2</b>	Understand the trained students in silkworm production techniques
	<b>CO3</b>	Apply sustainable rural economy by adapting sericulture for different climate condition
	<b>CO4</b>	Analyze the economics and marketing value of cocoons and silk
	<b>CO5</b>	Evaluate the entrepreneurial opportunities for rural development in Sericulture

<b>Programme Code : 06</b>	<b>M. Sc, Zoology</b>		
JOC – ANIMAL HUSBANDRY			
Batch 2021 - 2022	Hour/Week 3	Total hours 45	Credit 2

### Course objectives

1. To give an overview on the common breeds of livestock and their breeding habits.
2. To develop ideas about the various management practices and veterinary medicine.
3. To have a basic understanding of veterinary and dairy Science.

### Course outcomes (CO)

<b>K1 to K5</b>	<b>CO1</b>	Remember the concept about the basic principles and production of livestock.
	<b>CO2</b>	Understand the basic principles of animal genetics and role of reproductive physiology in livestock production.
	<b>CO3</b>	Apply the knowledge to understand the feeding system and role of nutrition in animal production.
	<b>CO4</b>	Analyze the impact of diseases and control measures on animal husbandry practices.
	<b>CO5</b>	Evaluate the technical knowledge for consultancy, marketing and entrepreneurship development in the field of animal husbandry.

<b>Programme code : 06</b>	<b>M.Sc, Zoology</b>		
ALC -Eco tourism			
Batch 2021-2022	Hour / Weeks 3	Total hours 45	Credits 2

### **Course Objectives**

1. Learn the importance of tourism.
2. Understand the Laws & policies related to tourism.
2. Understand the benefits of tourism.

### **Course outcomes (CO)**

<b>K1 to K5</b>	<b>CO1</b>	Get knowledge about the tourism industry
	<b>CO2</b>	Explain the National and International relationships with tourism
	<b>CO3</b>	Apply the knowledge of information technology in the tourism industry
	<b>CO4</b>	Familiarize about the passport and visa formalities
	<b>CO5</b>	Evaluate the natural disasters and their management