

COORDINATOR IQAC SCS GOVT. DEGREE COLLEGE MENDHAR**Department of Zoology****FYUGP 2020**

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| <p>Programme Outcome</p> | <p>PO-1. Comprehensive Understanding of Zoology: The program aims to provide students with a comprehensive understanding of the diverse field of Zoology, including the structure, function, and classification of animals, their evolution, and their interactions with the environment.</p> <p>PO-2. Critical Thinking and Problem-Solving Skills: The program emphasizes the development of critical thinking and problem-solving skills, enabling students to analyze complex biological problems, interpret data, and formulate effective solutions.</p> <p>PO-3. Laboratory and Fieldwork Competencies: The program equips students with practical skills and hands-on experience in various laboratory techniques, as well as field-based observations and data collection methods, preparing them for research and practical applications.</p> <p>PO-4. Appreciation of Biodiversity and Conservation: Students will develop an appreciation for the rich biodiversity of the region and gain knowledge about the importance of conservation efforts to protect endangered species and maintain ecosystem balance.</p> <p>PO-5. Interdisciplinary Approach: The program adopts an interdisciplinary approach, integrating knowledge from other related fields, such as biochemistry, genetics, and biotechnology, to provide a holistic understanding of Zoological concepts.</p> <p>PO-6. Communication and Collaboration: The program fosters the development of effective communication skills, both written and oral, enabling students to present their ideas and research findings to diverse audiences. Additionally, it promotes teamwork and collaborative learning, preparing students for the demands of the professional world.</p> <p>PO-7. Ethical and Environmental Awareness: The program instills a sense of ethical responsibility and environmental awareness in students, encouraging them to make informed decisions and contribute to the sustainable management of natural resources.</p> <p>PO-8. Career Preparedness: The program equips students with the knowledge and skills necessary for pursuing various career paths, including research,</p> |
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| | <p>academia, wildlife management, environmental conservation, and industry-related roles.</p> <p>PO-9. Lifelong Learning and Adaptability: The program cultivates a spirit of curiosity and a passion for lifelong learning, enabling students to adapt to the rapidly changing demands of the field and stay abreast of the latest advancements in Zoology.</p> <p>PO-10. Social Responsibility and Community Engagement: The program instills a sense of social responsibility and encourages students to engage with local communities, contributing to the dissemination of scientific knowledge and the implementation of conservation strategies.</p> |
| <p>Programme Specific Outcome</p> | <p>PSO1. Understand the biological diversity and grades of complexity of various animal forms through their systematic classification and process of organic evolution.</p> <p>PSO2. Understand the roles of plants, animals and microbes in the sustainability of the environment and their interaction among themselves and deterioration of the environment due to anthropogenic activities.</p> <p>PSO3. Understand the concepts and principles of biochemistry, immunology, physiology, ethology, endocrinology, developmental biology, cell biology, genetics, molecular biology and microbiology and develop technical skills in biotechnology, bioinformatics and biostatistics.</p> <p>PSO4. Perform laboratory procedures as per standard protocols in the areas of animal diversity, systematics, cell biology, genetics, biochemistry, molecular biology, microbiology, physiology, immunology, developmental biology, environmental biology, ethology, evolution and science methodology.</p> |
| <p>Course Outcomes</p> | |
| <p>BIOMOLECULES AND PHYSIOLOGY OF LIFE SUSTAINING SYSTEMS</p> | <p>CO-1. Understand the importance and scope of biochemistry in the study of life-sustaining systems.</p> <p>CO-2. Explain the structure, properties, and biological significance of carbohydrates, amino acids, proteins, lipids, and nucleic acids.</p> <p>CO-3. Demonstrate proficiency in performing biochemical tests to identify and characterize biomolecules such as amino acids, carbohydrates, proteins, and nucleic acids.</p> |

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| | <p>CO-4. Apply the knowledge of biomolecular structures and functions to comprehend the basic physiological processes that sustain life.</p> |
| <p>BASICS OF BIOCHEMISTRY & PHYSIOLOGY-I</p> | <p>CO-1. Understand the importance and scope of biochemistry in the study of life-sustaining systems.</p> <p>CO-2. Explain the structure, properties, and biological significance of carbohydrates, amino acids, proteins, lipids, and nucleic acids.</p> <p>CO-3. Demonstrate proficiency in performing biochemical tests to identify and characterize biomolecules such as amino acids, carbohydrates, proteins, and nucleic acids.</p> <p>CO-4. Apply the knowledge of biomolecular structures and functions to comprehend the basic physiological processes that sustain life.</p> |
| <p>BIODIVERSITY THREATS & CONSERVATION STRATEGIES</p> | <p>CO-1. Develop a comprehensive understanding of the concept of biodiversity, its components, and the various threats it faces.</p> <p>CO-2. Analyze the ecological, economic, and social implications of biodiversity loss and the need for effective conservation strategies.</p> <p>CO-3. Identify and manage the potential ecological impacts of recreation and tourism development on soil, water, vegetation, and wildlife.</p> <p>CO-4. Formulate and implement sustainable ecotourism practices that promote biodiversity conservation and responsible interaction with natural environments.</p> |
| <p>INTRODUCTION TO CLINICAL BIOCHEMISTRY</p> | <p>CO-1. Demonstrate a basic understanding of biological techniques and clinical pathology relevant to the field of biochemistry.</p> <p>CO-2. Describe the principles and applications of health and disease surveillance, health interventions, and disease prevention strategies.</p> <p>CO-3. Increase skills, attitudes, and knowledge towards identifying the causes of diseases and the importance of biochemistry in clinical settings.</p> <p>CO-4. Understand the scope and significance of biochemistry in the diagnosis, management, and prevention of health conditions.</p> |
| <p>BASICS IN CELL BIOLOGY</p> | <p>CO-1. Demonstrate a comprehensive understanding of the structure and function of cellular organelles and their role in the overall functioning of a cell.</p> <p>CO-2. Explain the complex regulatory mechanisms that control cellular processes, including cell division, growth, and differentiation.</p> |

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| | <p>CO-3. Apply the principles of cell biology to understand the basic mechanisms of life, including the growth and reproduction of organisms.</p> <p>CO-4. Analyze the significance of cellular processes in the context of the organization and functioning of multicellular organisms.</p> |
| CYTOLOGY | <p>CO-1. Demonstrate a comprehensive understanding of the structure and function of cellular organelles and their role in the overall functioning of a cell.</p> <p>CO-2. Explain the complex regulatory mechanisms that control cellular processes, including cell division, growth, and differentiation.</p> <p>CO-3. Apply the principles of cell biology to understand the basic mechanisms of life, including the growth and reproduction of organisms.</p> <p>CO-4. Analyze the significance of cellular processes in the context of the organization and functioning of multicellular organisms.</p> |
| APPLIED ZOOLOGY | <p>CO-1. Develop a basic understanding of epidemiology, focusing on the study of common infectious diseases and their transmission.</p> <p>CO-2. Acquire knowledge about the management and husbandry of economically important animal species, such as poultry and cattle.</p> <p>CO-3. Comprehend the principles of immunity and their relevance in the context of animal health and disease prevention.</p> <p>CO-4. Utilize the knowledge gained to contribute to public health initiatives and engage with healthcare systems to promote animal and human well-being.</p> |
| MEDICAL PARASITOLOGY | <p>CO-1. Demonstrate a comprehensive understanding of general parasitology, including the classification, morphology, and life cycles of parasites.</p> <p>CO-2. Develop proficiency in the application of advanced parasitological research methods for the identification, diagnosis, and management of parasitic infections.</p> <p>CO-3. Design and implement effective public health interventions to prevent and control the spread of parasitic diseases.</p> <p>CO-4. Engage with health systems and public health initiatives to increase skills, attitudes, and knowledge towards the causes and prevention of parasitic diseases.</p> |

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| <p style="text-align: center;">EVOLUTIONARY BIOLOGY</p> | <p>CO-1. Develop a thorough understanding of the theory of evolution and the mechanisms that drive the process of biological change over time.</p> <p>CO-2. Analyze the various lines of evidence, including fossil records, comparative anatomy, and molecular data, that support the theory of evolution.</p> <p>CO-3. Explain the origins of life on Earth and the evolutionary processes that have led to the diversity of life observed today.</p> <p>CO-4. Apply the principles of evolutionary biology to understand the adaptations and relationships between different organisms and their environments.</p> |
| <p style="text-align: center;">ENVIRONMENTAL BIOLOGY</p> | <p>CO-1. Demonstrate a comprehensive understanding of the fundamental concepts and principles of ecology, including the interactions between organisms and their environment.</p> <p>CO-2. Analyze the importance and scope of ecology in the context of environmental conservation and sustainable resource management.</p> <p>CO-3. Utilize the knowledge of ecological processes to devise strategies for the preservation and restoration of natural ecosystems.</p> <p>CO-4. Engage in environmental advocacy and contribute to the development of policies and initiatives that promote sustainable environmental practices.</p> |
| <p style="text-align: center;">ECOLOGY AND ENVIRONMENT</p> | <p>CO-1. Demonstrate a comprehensive understanding of the fundamental concepts and principles of ecology, including the interactions between organisms and their environment.</p> <p>CO-2. Analyze the importance and scope of ecology in the context of environmental conservation and sustainable resource management.</p> <p>CO-3. Utilize the knowledge of ecological processes to devise strategies for the preservation and restoration of natural ecosystems.</p> <p>CO-4. Engage in environmental advocacy and contribute to the development of policies and initiatives that promote sustainable environmental practices.</p> |
| <p style="text-align: center;">ECONOMIC ZOOLOGY</p> | <p>CO-1. Develop a basic understanding of epidemiology, focusing on the study of common infectious diseases and their transmission in the context of animal health.</p> <p>CO-2. Acquire knowledge about the management and husbandry of economically important animal species, such as poultry and cattle, and their role in economic development.</p> |

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| | <p>CO-3. Comprehend the principles of immunity and their relevance in the context of animal health and disease prevention.</p> <p>CO-4. Utilize the knowledge gained to contribute to public health initiatives and engage with healthcare systems to promote animal and human well-being through the application of economic zoology principles.</p> |
| MEDICAL GENETICS | <p>CO-1. Develop a comprehensive understanding of the fundamentals of clinical genetics, including the diagnosis and management of genetic disorders.</p> <p>CO-2. Analyze the genetic basis of various diseases and disorders, and acquire skills in interpreting genetic test results and karyotypes.</p> <p>CO-3. Demonstrate proficiency in providing genetic counseling to individuals and families affected by genetic conditions, and guide them towards appropriate interventions and support.</p> <p>CO-4. Apply the knowledge of medical genetics to contribute to the advancement of genetic research and the development of personalized healthcare strategies.</p> |
| PHYSIOLOGY OF CONTROLLING AND COORDINATING SYSTEMS | <p>CO-1. Acquire in-depth knowledge about the functioning of various body systems and their interrelationships, ensuring well-coordinated physiological processes.</p> <p>CO-2. Analyze the mechanisms of homeostasis and the maintenance of physiological balance within the body, and understand the implications of homeostatic imbalances.</p> <p>CO-3. Apply the principles of physiology to better understand the biological processes that underlie organismal health and adaptation.</p> <p>CO-4. Utilize the knowledge gained in this course to approach biological concepts with a deeper understanding and appreciation for the complexity of living systems.</p> |
| PARASITOLOGY | <p>CO-1. Develop a comprehensive understanding of the host-parasite relationship, including the ecology, distribution, and the diversity of parasites across the animal kingdom.</p> <p>CO-2. Analyze the various diseases and health implications caused by parasitic infections, and acquire the knowledge to recognize and diagnose these conditions.</p> <p>CO-3. Understand the fundamental principles of parasitology and their relevance in the context of public health and disease prevention.</p> |

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| | <p>CO-4. Contribute to the advancement of parasitological research and the development of effective strategies for the management and control of parasitic diseases.</p> |
| <p>PRINCIPLES OF GENETICS</p> | <p>CO-1. Demonstrate a strong foundation in the principles of Mendelian genetics, including the concepts of genotype, phenotype, and gene interactions.</p> <p>CO-2. Analyze the mechanisms of genetic inheritance, including the processes of recombination and changes in chromosome structure and number.</p> <p>CO-3. Apply the principles of genetics to understand the scope and significance of genetic research, and appreciate the practical applications of genetics in various fields.</p> <p>CO-4. Utilize the knowledge gained in this course to engage in discussions and critical analyses related to the ethical and societal implications of genetic research and technology.</p> |
| <p>WILDLIFE CONSERVATION AND MANAGEMENT</p> | <p>CO-1. Develop a comprehensive understanding of the importance of wildlife and the scientific approaches to the management and conservation of wildlife resources.</p> <p>CO-2. Analyze the various threats to wildlife populations and the strategies employed for their protection and sustainable utilization.</p> <p>CO-3. Demonstrate the ability to apply the principles of wildlife management and conservation to contribute to the development of effective policies and initiatives.</p> <p>CO-4. Engage in the promotion of environmental awareness and the advocacy for the preservation of biodiversity and natural habitats.</p> |
| <p>WILDLIFE BIOLOGY</p> | <p>CO-1. Develop a comprehensive understanding of the field of wildlife biology, including the study of various species, their habitats, and the ecological relationships within natural ecosystems.</p> <p>CO-2. Analyze the impact of human activities on wildlife populations and the environment, and acquire the knowledge to devise strategies for sustainable wildlife management.</p> <p>CO-3. Demonstrate the ability to apply the principles of wildlife biology to contribute to conservation efforts and the development of effective wildlife management policies.</p> <p>CO-4. Engage in research, field observations, and the dissemination of knowledge to promote the understanding and appreciation of the natural world and its diverse inhabitants.</p> |