Programme Educational Objectives (PEOs)

PEO1: Design solutions to problems at the intersection of biology ranging from molecular to global issues

PEO2: Address societal and ecological needs in food and fiber production and processing, biotechnology, pharmaceuticals, green chemicals, renewable energy, environmental protection, and sustainable development.

PEO3: Collaborate effectively as members of multi-disciplinary teams and communicate effectively across a diversity of audiences.

PEO4: Advance professionally through mentoring and life-long learning.

Programme Outcomes (POs)

PO1: Students gain knowledge and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms

PO2: Analyze complex interactions among the various animals of different phyla, their distribution and their relationship with the environment

PO3: Apply the knowledge of internal structure of cell, its functions in control of various metabolic functions of organisms.

PO4: Understands the complex evolutionary processes and behavior of animals

PO5: Correlates the physiological processes of animals and relationship of organ systems

PO6: Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species

PO7: Gain knowledge of Agro based Small Scale industries like sericulture, fish farming, butterfly farming and vermicomposting preparation.

PO8: Understands about various concepts of genetics and its importance in human health

PO9: Apply ethical principles and commit to professional ethics and responsibilities in delivering his duties

PO10: Apply the knowledge and understanding of Zoology to one's own life and work

PO11: Develops empathy and love towards the animals

Program Specific Outcomes (PSOs):

PSO1: Emphasizes the diversity inform and function of plants and animals, create an awareness of the impact on the environment, society, appraise role of green chemistry in environments sustainability.

PSO2: Students will be able to pursue higher education & focuses on scientific research, and apply this knowledge in both real life and in a laboratory setting.

PSO3: The fundamental skills with in the field of Biology are understood and hence can function effectively as professionals in the Life Science based industries.

PSO4: This programme is vital to further increase their understanding of human health and environmental issues.

PSO5: Students will be able to understand the fundamental theories, concepts and applications in basic areas of research.

PSO6: Develop the ability to explore new areas of research in life sciences and allied field of Life science.

Course outcome (CO)

Course Code: MSCZ-101
Title of the Course: Biosystematics and Taxonomy

Course outcomes:
CO1: Enable to understand the fundamental principles of systematic in which the animals are
CO2: How to classify according to their characters and what are the theories which have to follow for classification is studied.
CO3: International rules of nomenclature and classification is studied

Course Code: MSCZ-102
Title of the Course: Biosystematics and Taxonomy Practical

Course outcomes:
CO1: Enable to understand the fundamental principles of systematic in which the animals are
CO2: How to classify according to their characters and what are the theories which have to follow for classification is studied.
CO3: International rules of nomenclature and classification is studied

Course Code: MSCZ-103
Title of the Course: Insect and Environment

Course Outcomes:
CO1: Define the basic ecological principles in term of the insects.
CO2: Define the effects of biotic and abiotic factors on insects.
CO3: Define the relationships of insects with themselves and their environments

Course Code: MSCZ-104
Title of the Course: Insect and Environment Practical
Course Outcomes:
CO1: Define the basic ecological principles in term of the insects.
CO2: Define the effects of biotic and abiotic factors on insects.
CO3: Define the relationships of insects with themselves and their environments

Course Code: MSCZ-105
Title of the Course: Microbiology

Course outcomes:
CO1: Demonstrate theory and practical skills in microscopy and their handling techniques and staining procedures.
CO2: Understand the basic microbial structure and function and study the comparative characteristics of prokaryotes and eukaryotes and also understand the structural similarities and differences among various physiological groups of bacteria/Achaea.
CO3: Know various Culture media and their applications and also understand various physical and chemical means of sterilization.

Course Code: MSCZ-106
Title of the course: Microbiology Practical

CO1: Demonstrate theory and practical skills in microscopy and their handling techniques and staining procedures.
CO2: Understand the basic microbial structure and function and study the comparative characteristics of prokaryotes and eukaryotes and also Understand the structural similarities and differences among various physiological groups of bacteria/archaea.
CO3: Know various Culture media and their applications and also understand various physical and chemical means of sterilization.

Course Code: MSCZ-107
Title of the Course: Molecular Biology

Course outcomes:
CO1: Imparts knowledge about various analytical techniques
CO2: Guide about molecular biology techniques
CO3: Focuses on Ethics in biology

Course Code: MSCZ-108
Title of the Course: Molecular Biology Practical

Course outcomes:
CO1: Imparts knowledge about various analytical techniques
CO2: Guide about molecular biology techniques
CO3: Focuses on Ethics in biology

Course Code: MSCZ-109
Title of the Course: Mathematical Biology

Course Outcomes:
CO1: Formulate discrete and differential equation models
CO2: Guide about mathematical concepts inbiology
CO3: Impart knowledge of mathematics

Course Code: MSCZ-110
Title of the Course: Bioremediation

Course Outcomes:
CO 1: Demonstrate an understanding of the nature and importance of bioremediation.
CO 2: Understand the influence of contaminant characteristics to bioremediation(e.g. chemical structure, toxicity, and solubility).
CO 3: Demonstrate the use of course concepts to solve problems in real world applications.

Course Code: MSCZ-111
Title of the Course: Statistical Techniques

Course Outcomes:
CO 1: Organize, manage and present data.
CO 2: Analyze statistical data graphically using frequency distributions and cumulative frequency distributions
CO 3: Analyze statistical data using measures of central tendency, dispersion and location

Course Code: MSCZ-112
Title of the Course: Human Values and Professional Ethics

Course Outcomes:
CO1: Ensures students sustained happiness through identifying the essentials of human values and skills.
CO2: It helps students understand practically the importance of trust, mutually satisfying human behavior and enriching interaction with nature**.**

Course Code: MSCZ-201
Title of the Course: Molecular Cytogenetics

Course Outcomes:
CO1: Describe Mendelian and non-Mendelian inheritance.
CO2: Describe the genetic code and the process of transcription of RNA from DNA.
CO3: Sketch the structure of a chromosome.

Course Code: MSCZ- 202
Title of the Course: Molecular Cytogenetic Practical

Course Outcomes:
CO1: Describe Mendelian and non-Mendelian inheritance.
CO2: Describe the genetic code and the process of transcription of RNA from DNA.
CO3: Sketch the structure of a chromosome.

Course Code: MSCZ-203
Title of the Course: Biochemistry

Course Outcomes:
CO1: Provide students with learning experiences that help instill deep interests in learning biochemistry;
CO2: Develop broad and balanced knowledge and understanding of biomolecules
CO3: Understanding of key biochemical concepts, principles and theories related to Biochemistry

Course Code: MSCZ-204
Title of the Course: Biochemistry Practical

Course Outcomes:
CO1: Provide students with learning experiences that help instill deep interests in learning biochemistry;
CO2: Develop broad and balanced knowledge and understanding of biomolecules
CO3: Understanding of key biochemical concepts, principles and theories related to biochemistry

Course Code: MSCZ-205
Title of the Course: General immunology

Course Outcomes:

CO1: Demonstrate the basic knowledge of immunological processes at a cellular and molecular level.
CO2: Define central immunological principles and concepts. Outline
CO3: Compare and contrast the key mechanisms and cellular players of innate and adaptive immunity and how they relate

Course Code: MSCZ-206
Title of the Course: General immunology Practical

Course Outcomes:

CO1: Demonstrate the basic knowledge of immunological processes at a cellular and molecular level.
CO2: Define central immunological principles and concepts. Outline
CO3: Compare and contrast the key mechanisms and cellular players of innate and adaptive immunity and how they relate

Course Code: MSCZ- 207
Title of the Course: Bioinformatics, Biotechnology and Nanotechnology

Course Outcomes:
CO1: Students gain knowledge about various tools and techniques used in biological systems and gives them insight about their use in research.
CO2: Biostatistics teaches them to use the best data analysis methods in their research projects
CO3: Students gains knowledge about statistical methods like measures of central tendencies, Probability and Nano technological aspects

Course Code: MSCZ-208
Title of the Course: Bioinformatics, Biotechnology &nanotechnology Practical

Course Outcomes:
CO1: Students gain knowledge about various tools and techniques used in biological systems and gives them insight about their use in research.
CO2: Biostatistics teaches them to use the best data analysis methods in their research projects
CO3: Students gains knowledge about statistical methods like measures of central tendencies, Probability and Nano technological aspects

Course Code: MSCZ -209
Title of the Course: Population Biology and Biodiversity

Course Outcomes:
CO1: Systematically understand biodiversity and its vital role in ecosystem function
CO2: Identify the importance of biodiversity in natural environments
CO3: Critically examine biodiversity and human linkages, and help Policy formulating for conservation.

Course Code: MSCZ-210

Title of the Course: Seed Biotechnology

Course Outcomes:
CO 1: Learning important milestones in the plant tissue culture**.**
CO 2: Knowledge regarding applications of biotechnology in seed development

Course Code: MSCZ -211
Title of the Course: Plant Breeding and Intellectual Property Rights

Course Outcomes:
CO1: The plant breeding methodologies and applications employed for self,cross and vegetative propagated crops will be exposed
CO 2: Course imparts knowledge of seed biotechnology
CO 3: Enable to focus on IPR

Course Code: MSCZ -212

Title of the Course: Solid Waste Management

Course Outcomes:
CO1: Make an economic analysis of the solid waste management system. Set up a municipal solid waste management system.
CO2: Make physical and chemical analysis of municipal solid wastes and apply them for a management system that will be set up.
CO3: Make route optimization for a solid waste collection and transport system**.**

Course Code: MSCZ -213

Title of the Course: Water and Waste water Analysis

Course Outcomes:
CO1: Explain the need for wastewater treatment; categorize the wastewater based on characteristics
CO 2: Guide about various physic-chemical methods of analysis

Course Code: MSCZ -214

Title of the Course: Computer Fundamentals

Course Outcomes:

CO1: Bridge the fundamental concepts of computers with the present level of knowledge of the students
CO 2: Guide about various physic-chemical methods of analysis

Course Code: MSCZ-301
Title of the Course: Animal Behaviour

Course Outcomes:
CO1: Exhibit critical and integrative thinking skills
CO2: Demonstrate ability to communicate scientific information in both oral and written formats

CO3: Demonstrate knowledge of key concepts in animal behavior

Course Code: MSCZ-302
Title of the Course: Animal Behavior Practical

Course Outcomes:
CO1: Exhibit critical and integrative thinking skills
CO2: Demonstrate ability to communicate scientific information in both oral and written formats
CO3: Demonstrate knowledge of key concepts in animal behavior

Course Code: MSCZ-303
Title of the Course: General Endocrinology

Course Outcomes:
CO1: To discuss the definition of a hormone in terms of its general properties.
CO2: To differentiate among endocrine, paracrine and autocrine systems

Course Code: MSCZ-304
Title of the Course: General Endocrinology Practical

Course Outcomes:
CO1: To discuss the definition of a hormone in terms of its general properties.
CO2: To differentiate among endocrine, paracrine and autocrine systems

Course Code: MSCZ-305
Title of the Course: Research Methodology

Course Outcomes:

CO1: Understanding the nature of problem to best studied and identifying the related area of Knowledge.

CO2: Reviewing literature to understand how others have approached or dealt with the problem.

CO3: Collecting data in an organized and controlled manner so as to arrive at valid decisions.

CO4: Analyzing data appropriate to the problem

Course Code: MSCZ-306
Title of the Course: Dynamics of Biogeography

Course Outcomes:
CO1: Seeks to understand the role of historical factors in shaping.
CO2: Provides insights into the effects of global change on biota.

Course Code: MSCZ -307
Title of the Course: Perspectives in Conservation

Course Outcomes:
CO1: Impart knowledge of biological diversity
CO2: Focuses on conservation of biodiversity
CO 3: Guide about bio wealth

Course Code: MSCZ-308
Title of the Course: Intellectual Property Rights

Course Outcomes:
CO1: The plant breeding methodologies and applications employed forself, cross and vegetative propagated crops will be exposed
CO2: Course imparts knowledge of seed biotechnology
CO3: Enable to focus on IPR

Course Code: MSCZ -401
Title of the Course: Analytical Tools and Techniques

Course Outcomes:
CO1: The primary objectives of this course are to develop the skills to understand the theory and practice of bio analytical techniques
CO2: To provide scientific understanding of analytical techniques and detailinterpretation of results

Course Code: MSCZ-402
Title of the Course: Analytical Tools and Techniques Practical

Course Outcomes:
CO1: The primary objectives of this course are to develop the skills to understand the theory and practice of bio analytical techniques
CO2: To provide scientific understanding of analytical techniques and detailinterpretation of results

Course Code: MSCZ-403
Title of the Course: Developmental Biology

Course Outcomes:
CO1: Name, describe and order the main stages of development common to most multicellular organisms.
CO2: Describe the main anatomical changes that occur during development.
CO3: Identify the cellular behaviors that lead to morphological change during development.

Course Code: MSCZ-404
Title of the Course: Developmental Biology Practical

Course Outcomes:
CO1: Name, describe and order the main stages of development common to most multi cellular organisms.
CO2: Describe the main anatomical changes that occur during development.
CO3: Identify the cellular behaviors that lead to morphological change during development.

Course Code: MSCZ-405
Title of the Course: Wild Life and Its Management

Course Outcomes:
CO1: students will be able to identify species, characteristics, habitat requirements and life cycles of birds, fish and/or mammalian wildlife species.
CO2: Students will be able to apply knowledge to solve problems related to wildlife conservation and management.
CO3: Students will have a greater knowledge of how wildlife conservation and management relates to the economy and environment, both currently and in the future.

Course Code: MSCZ-406
Title of the Course: Wild Life and Its Management Practical

Course Outcomes:
CO1: students will be able to identify species, characteristics, habitat requirements and life cycles of birds, fish and/or mammalian wildlife species.
CO2: Students will be able to apply knowledge to solve problems related to wildlife conservation and management.
CO3: Students will have a greater knowledge of how wildlife conservation and management relates to the economy and environment, both currently and in the future.

Course Code: MSCZ-407
Title of the Course: Insect Control and Toxicology

Course outcomes:
CO1: Outline the history of insecticides and recognize the major classes of insecticide and understand their mode of action
CO2: List and describe processes involved in toxic dynamics of insecticides
CO3: Become aware of the limitations of insecticide use such as resistance and environmental contamination
CO4: Develop a basic understanding on performing insect bioassays

Course Code: MSCZ-408
Title of the Course: Insect pest control and toxicology Practical

Course outcomes:
CO1: Outline the history of insecticides and recognize the major classes of insecticide and understand their mode of action
CO2: List and describe processes involved in toxic dynamics of insecticides
CO3: Become aware of the limitations of insecticide use such as resistance and environmental contamination
CO4: Develop a basic understanding on performing insect bioassays

Course Code: MSCZ-409
Title of the Course: Dissertation

Course Outcomes:

CO1: Design the experiments of his interest and execute it

CO2: Trained in handling of the basic and advance instruments

CO3: Generate the data, compile and analyze and interpret the data.