

DEPARTMENT OF ZOOLOGY
M.Sc., ZOOLOGY
(Five Year Integrated Programme)

19 IZOT 14: Invertebrata- I

Course Outcomes:

- CO1: Understand the diverse forms of lower invertebrates
- CO2: Identify common protozoans
- CO3: Identify common coelenterates and ctenophore
- CO4: Understand common parasitic platyhelminthes and nematodes and also Classify lower invertebrate upto orders based on morphological characters

19 IZOT 24: Invertebrata- II

Course Outcomes:

- CO1: Understand the diversity and significance of higher invertebrates
- CO2: Identify higher invertebrates upto order based on morphological features
- CO3: Understand the various salient features of annelids
- CO4: Identify and explain onychopora and arthropods and also Identify and differentiate various echinoderms

19IZOT 33: Chordata – I

Course Outcomes:

- CO1: Understand the diversity of lower chordates
- CO2: Learn the salient features and classification of lower chordates
- CO3: Know the structural organization of protochordata and vertebrata
- CO4: Understand origin of chordate and general characters of agnatha

19 IZOT 43: Chordata – II

Course Outcomes:

- CO1: Identify different types of higher chordates based on their morphology
- CO2: Differentiate poisonous and non poisonous snakes and other reptiles
- CO3: Understand flying adaptations in birds
- CO4: Understand origin, ancestry and adaptive radiation among mammals and also differentiate the anatomical features of various internal organs

19 Izot 51: Cell Biology

Course Outcomes:

- CO1: Acquire knowledge on basic structure and functions of cells
- CO2: Differentiate various cell organelles and their role
- CO3: Identify nucleus and chromosomes
- CO4: Identify various stages of cell divisions
- CO5: Work in various research and clinical organization

19 IZOT 52: Principles of Genetics

Course Outcomes:

- At the end of the semester students shall be able to
- CO1: Interpret phenotypic expressions based on genotype
 - CO2: Understand and interpret genetically linked diseases, Polygenic inheritance and crossing over
 - CO3: Perform blood grouping and test metabolic disorders and Interpret genetics of sex determination and inheritance
 - CO4: Work in clinical laboratories and take up researches

19 IZOT 53: Comparative Animal Physiology

Course Outcomes:

- CO1: Understand basic biochemical molecules and their roles
- CO2: Appreciate the nutritional requirements and the roles of nutrition in physiology
- CO3: Learn the functioning and roles of respiratory and circulatory system
- CO4: Analyse the physiology of excretion and osmoregulation

19 IZOT 54: Applied Zoology

Course Outcomes:

- CO1: Perform basic computer operation and bio-informatics technologies
- CO2: Get top opportunity in fertility clinics and technicians
- CO3: Start entrepreneurial activities
- CO4: Start poultry farming and dairy operations

19 IZOT 61: Basic Embryology

Course Outcomes:

- CO1: Assimilate knowledge on reproduction and development
- CO2: Differentiate between spermatogenesis and oogenesis
- CO3: Understand process of fertilization
- CO4: Understand the whole process of embryogenesis and Interpret metamorphosis and regeneration

19 IZOT 62: Evolution-I

Course outcome

- CO1: Understand and appreciate the concept of organic evolution and origin of life
- CO2: Differentiate between various theories of evolution
- CO3: Interpret polymorphism and population genetics and also explain the various animal behavior patterns
- CO4: Understand the role of isolation in species formation and evolution and Get employment in zoological museums, zoological survey of India and paleontological institutes

19 IZOT 62: Evolution-I

Course Outcomes:

- CO1: Understand and appreciate the concept of organic evolution and origin of life
- CO2: Differentiate between various theories of evolution
- CO3: Interpret polymorphism and population genetics and also explain the various animal behavior patterns
- CO4: Understand the role of isolation in species formation and evolution and Get employment in zoological museums, zoological survey of India and paleontological institutes

19 IZOT 63: Ecology

Course Outcomes:

- CO1: Analyse and appreciate the basic ecological concepts
- CO2: Differentiate biotic factors and of biotic community
- CO3: Critically evaluate the process of ecological adaptations and successions
- CO4: Understand significance of natural resources and wildlife and their conservation

19 IZOT 64: Animal Culture Techniques

Course Outcomes:

- CO1: Start entrepreneurial activities involving solid waste management and vermicomposting
- CO2: Take up apiculture as a profession

CO3: Take up sericulture as a profession
CO4: Start aquaculture and also take up jobs in animal culture industry

19 IZOT 71: Structure And Functions of Invertebrates and Vertebrates

Course Outcomes:

CO1: Understand the morphological features and physiological features like Respiration, reproduction and nervous system of invertebrates and Vertebrates
CO2: Understand the various salient features of higher invertebrates and Vertebrates
CO3: Differentiate the patterns of functioning of various organ systems in invertebrates and vertebrates
CO4: Know the structural organization and functioning of various organs in invertebrates and vertebrates

19 IZOT 72: Developmental Biology

Course Outcomes:

CO1: Acquire knowledge on reproduction and development
CO2: Understand process of fertilization
CO3: Understand the whole process of embryogenesis
CO4: Acquisition of skills in common methods and practices followed in developmental biology related laboratory activities and also Take up jobs in fertility clinics and research labs

19 IZOT 73: Cell and Molecular Biology

Course Outcomes:

CO1: Interpret the structural and functional significances of DNA and RNA
CO2: Perform molecular biological techniques
CO3: Take up research career in molecular biology
CO4: Take up jobs in molecular biology labs and clinical labs

19 IZOT 81: Animal Physiology

Course Outcomes:

CO1: Understand the normal physiological functions and necessity to maintain a healthy life
CO2: Get an opportunity to understand various factors that could lead to altered physiological functions and thereby health problems
CO3: Perform various physiological experiments and observations
CO4: Take up jobs in clinical labs and research institutes

19 IZOT 82: Genetics

Course Outcomes:

CO1: Interpret phenotypic expressions based on genotype
CO2: Understand and interpret genetically linked diseases
CO3: Perform blood group analysis and test metabolic disorders
CO4: Working clinical laboratories and take up researches

19 IZOT 83: Immunology

Course Outcomes:

CO1: Analyse the various immunological issues
CO2: Apply immunological principles for various immunological testing procedures
CO3: To Interpret the results of immunological experiments
CO4: Carry out immunological investigation and also take up jobs in clinical labs and related institutions

19IZOT 91: Evolution- II

Course outcome

- CO1. Analyse the evolutionary history of biological organisms
- CO2. Critically assess the evolutionary relationship among various phyla
- CO3. Identify the role of natural selection in the survival of the species
- CO4. Understand the various mechanism involved in evolution.

19IZOT 92: Environment & Biodiversity Conservation

Course outcome

After successful completion of the course students shall be able to

- CO1. Analyse and appreciate the basic ecological concepts
- CO2. Critically assess environmental disasters and suggest counter measures
- CO3. Develop a mind set to safeguard natural resources and take forward the concept of sustainable development
- CO4. Protect the environment by acting against pollution

19IZOT 93: Animal Behaviours

Course Outcomes:

At the end of the semester students shall be able to

- CO1: Master the theoretical as well as practical knowledge in the field of animal behaviour
- CO2: Interpret the genetic basis of behavioral patterns
- CO3: Appreciate the socio-biological elements in the behavior of various animal groups and their significance.
- CO4: Understand the impact of hormones in the manifestation of various behaviours

19IZOT 94: Biotechnology

Course Outcomes:

At the end of the semester students shall be able to

- CO1: Master the theoretical as well as practical knowledge in various field of biotechnology
- CO2: Perform various experiments related to biotechnology
- CO3: Carry out biotechnological applications in the fields of medicine, agriculture and environmental fields
- CO4: Equip the students to take up jobs in various biotechnological companies and labs

19IZOT 101: Biochemistry

Course Outcomes:

At the end of the semester students shall be able to

- CO1: Able to understand various micro and macro molecules and their significance
- CO2: Able to discriminate various metabolic disorders
- CO3: To take up jobs in clinical labs
- CO4: To analyze biological samples of bio-chemical importance

19IZOT 102: Endocrinology

Course Outcomes:

At the end of the semester students shall be able to

- CO1: Master the theoretical and practical aspects of endocrinology across various phyla
- CO2: Apply the endocrinological methods and procedures for higher studies and research
- CO3: To take up jobs in clinical labs
- CO4: To analyze biological samples of endocrinological importance

19IZOTE15-1 Medical Entomology

Course Outcomes:

At the end of the semester students shall be able to
CO1: Identify insects based on morphological features
CO2: Start entrepreneurial activities in sericulture and apiculture
CO3: Take up jobs in vector control and public health departments
CO4: Take up integrated pest management activities

Elective – 1 19IZOTE15-2 Bio-Physics

Course Outcomes:

CO1: To analyze the various forces responsible of biological molecular structure
CO2: To gain the knowledge of cellular permeability
CO3: To understand the dynamics of biological systems
CO4: To correlate the biomolecular structure to its specific functions

Elective – 2 19IZOTE35-1 Aquaculture

Course Outcomes:

CO1: Master the theoretical and practical aspects of fisheries across different species
CO2: Apply the Aquaculture methods and procedures for higher studies and research
CO3: To take up jobs in Aquaculture farms
CO4: To analyze biological samples of Aquaculture ponds

Elective – 2 19IZOTE35-1 Pisciculture

Course Outcomes:

CO 1: Take up employment in commercial fish farms
CO 2: Start entrepreneurship in fish farming sector.
CO 3: Identify common cultivable fishes
CO 4: Identify and manage common fish diseases
CO 5: Take up employment in industrial fisheries sector
CO 6: Start entrepreneurship involving harvesting and post harvesting technologies

Elective – 3 19IZOTE55-1 Bioinformatics

Course Outcomes:

CO1: Master the theoretical and practical aspects of Bio-informatics
CO2: Apply the Bio-uinformatical methods and procedures for higher studies and research
CO3: To take up jobs in medical industries
CO4: To analyze biological samples through bioinformatical importance

Elective – 3 19IZOTE55-1 Medical Laboratory Techniques

Course Outcomes:

CO1: Master the theoretical and practical aspects of endocrinology across various phyla
CO2: Apply the endocrinological methods and procedures for higher studies and research
CO3: To take up jobs in clinical labs
CO4: To analyze biological samples of endocrinological importance

19IZOTE84 -1 Entomology

Course Outcomes:

CO1: Identify insects based on morphological features
CO2: Start entrepreneurial activities in sericulture and apiculture
CO3: Take up jobs in vector control and public health departments
CO4: Take up integrated pest management activities

19IZOTE84-2 Public Health and Hygiene

Course Outcomes:

At the end of the semester students shall be able to

CO1: Analyse various common vectors and diseases, causing organisms

CO2: Impart skills the general Public for public health and hygiene

CO3: Work in clinical labs

CO4: Take up research on issues related to public health and hygiene

19IZOTE95-1 Fisheries and Aquaculture**Course Outcomes:**

At the end of the semester students shall be able to

CO1: Understand and analyse various issues related to fisheries and aquaculture

CO2: Take up jobs in fisheries and aquaculture sectors

CO3: Start aquaculture activities on their own

CO4: Take up jobs in marine product export sectors

CO5: Take up research activities in various fisheries institutions and Universities

19IZOTE95-2 Toxicology

Course outcome

At the end of the semester students shall be able to

CO1: Carry out toxicological analysis of various environmental samples

CO2: Make observations and biochemical analysis of biological samples

CO3: Carry out toxicological testing using live specimen to determine toxicity of toxicants

CO4: Take up jobs in toxicological research institutions and clinical labs

19IZOA15: Ancillary Zoology- I (Animal Diversity-I)**Course Outcomes:**

CO1: Identify a fauna based on morphological character

CO2: Identify poisonous and non- poisonous snakes

CO3: Identify extinct fauna

CO4: Distinguish primitive mammals

CO5: Understand origin of chordates

19IZOA16: Ancillary Zoology Paper-II**Course Outcomes:**

CO1: Identify various organelles and their functions

CO2: Correlate developmental patterns in animals

CO3: Understand evolutionary process taking place in biological world

CO4: Analyse the anatomical details of human

CO5: Critically evaluate genetic principles involved in multiple alleles and sex determination

19IZOOX815 : Animal Culture Techniques**Course Outcomes:**

CO1: Start entrepreneurial activities involving solid waste management and Vermicomposting

CO2: Take up apiculture as a profession

CO3: Take up sericulture

CO4: Start aquaculture

19IZOOX915: Environmental Science**Course Outcomes:**

CO1: Identify environmental issues

- CO2: Appreciate wild life and natural resources
- CO3: Develop talent to conserve nature
- CO4: Provide basic environmental education to the society

DEPARTMENT OF ZOOLOGY
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19 IZOT 14: Invertebrata- I

Course Outcomes:

- CO1: Understand the diverse forms of lower invertebrates
- CO2: Identify common protozoans
- CO3: Identify common coelenterates and ctenophore
- CO4: Understand common parasitic platyhelminthes and nematodes and also Classify lower invertebrate upto orders based on morphological characters

19 IZOT 24: Invertebrata- II

Course Outcomes:

- CO1: Understand the diversity and significance of higher invertebrates
- CO2: Identify higher invertebrates upto order based on morphological features
- CO3: Understand the various salient features of annelids
- CO4: Identify and explain onychopora and arthropods and also Identify and differentiate various echinoderms

19IZOT 33: Chordata – I

Course Outcomes:

- CO1: Understand the diversity of lower chordates
- CO2: Learn the salient features and classification of lower chordates
- CO3: Know the structural organization of protochordata and vertebrata
- CO4: Understand origin of chordate and general characters of agnatha

19 IZOT 43: Chordata – II

Course Outcomes:

- CO1: Identify different types of higher chordates based on their morphology
- CO2: Differentiate poisonous and non poisonous snakes and other reptiles
- CO3: Understand flying adaptations in birds
- CO4: Understand origin, ancestry and adaptive radiation among mammals and also differentiate the anatomical features of various internal organs

19 Izot 51: Cell Biology

Course Outcomes:

- CO1: Acquire knowledge on basic structure and functions of cells
- CO2: Differentiate various cell organelles and their role
- CO3: Identify nucleus and chromosomes
- CO4: Identify various stages of cell divisions
- CO5: Work in various research and clinical organization

19 IZOT 52: Principles of Genetics

Course Outcomes:

- At the end of the semester students shall be able to
- CO1: Interpret phenotypic expressions based on genotype
 - CO2: Understand and interpret genetically linked diseases, Polygenic inheritance and crossing over

CO3: Perform blood grouping and test metabolic disorders and Interpret genetics of sex determination and inheritance

CO4: Work in clinical laboratories and take up researches

19 IZOT 53: Comparative Animal Physiology

Course Outcomes:

CO1: Understand basic biochemical molecules and their roles

CO2: Appreciate the nutritional requirements and the roles of nutrition in physiology

CO3: Learn the functioning and roles of respiratory and circulatory system

CO4: Analyse the physiology of excretion and osmoregulation

19 IZOT 54: Applied Zoology

Course Outcomes:

CO1: Perform basic computer operation and bio-informatics technologies

CO2: Get top opportunity in fertility clinics and technicians

CO3: Start entrepreneurial activities

CO4: Start poultry farming and dairy operations

19 IZOT 61: Basic Embryology

Course Outcomes:

CO1: Assimilate knowledge on reproduction and development

CO2: Differentiate between spermatogenesis and oogenesis

CO3: Understand process of fertilization

CO4: Understand the whole process of embryogenesis and Interpret metamorphosis and regeneration

19 IZOT 62: Evolution-I

Course outcome

CO1: Understand and appreciate the concept of organic evolution and origin of life

CO2: Differentiate between various theories of evolution

CO3: Interpret polymorphism and population genetics and also explain the various animal behavior patterns

CO4: Understand the role of isolation in species formation and evolution and Get employment in zoological museums, zoological survey of India and paleontological institutes

19 IZOT 62: Evolution-I

Course Outcomes:

CO1: Understand and appreciate the concept of organic evolution and origin of life

CO2: Differentiate between various theories of evolution

CO3: Interpret polymorphism and population genetics and also explain the various animal behavior patterns

CO4: Understand the role of isolation in species formation and evolution and Get employment in zoological museums, zoological survey of India and paleontological institutes

19 IZOT 63: Ecology

Course Outcomes:

CO1: Analyse and appreciate the basic ecological concepts

CO2: Differentiate biotic factors and of biotic community

CO3: Critically evaluate the process of ecological adaptations and successions
CO4: Understand significance of natural resources and wildlife and their conservation

19 IZOT 64: Animal Culture Techniques

Course Outcomes:

CO1: Start entrepreneurial activities involving solid waste management and vermicomposting
CO2: Take up apiculture as a profession
CO3: Take up sericulture as a profession
CO4: Start aquaculture and also take up jobs in animal culture industry

19 IZOT 71: Structure And Functions of Invertebrates and Vertebrates

Course Outcomes:

CO1: Understand the morphological features and physiological features like Respiration, reproduction and nervous system of invertebrates and Vertebrates
CO2: Understand the various salient features of higher invertebrates and Vertebrates
CO3: Differentiate the patterns of functioning of various organ systems in invertebrates and vertebrates
CO4: Know the structural organization and functioning of various organs in invertebrates and vertebrates

19 IZOT 72: Developmental Biology

Course Outcomes:

CO1: Acquire knowledge on reproduction and development
CO2: Understand process of fertilization
CO3: Understand the whole process of embryogenesis
CO4: Acquisition of skills in common methods and practices followed in developmental biology related laboratory activities and also Take up jobs in fertility clinics and research labs

19 IZOT 73: Cell and Molecular Biology

Course Outcomes:

CO1: Interpret the structural and functional significances of DNA and RNA
CO2: Perform molecular biological techniques
CO3: Take up research career in molecular biology
CO4: Take up jobs in molecular biology labs and clinical labs

19 IZOT 81: Animal Physiology

Course Outcomes:

CO1: Understand the normal physiological functions and necessity to maintain a healthy life
CO2: Get an opportunity to understand various factors that could lead to altered physiological functions and thereby health problems
CO3: Perform various physiological experiments and observations
CO4: Take up jobs in clinical labs and research institutes

19 IZOT 82: Genetics

Course Outcomes:

CO1: Interpret phenotypic expressions based on genotype
CO2: Understand and interpret genetically linked diseases
CO3: Perform blood group analysis and test metabolic disorders
CO4: Working clinical laboratories and take up researches

19IZOT 83: Immunology**Course Outcomes:**

CO1: Analyse the various immunological issues

CO2: Apply immunological principles for various immunological testing procedures

CO3: To Interpret the results of immunological experiments

CO4: Carry out immunological investigation and also take up jobs in clinical labs and related institutions

19IZOT 91: Evolution- II**Course outcome**

CO1. Analyse the evolutionary history of biological organisms

CO2. Critically assess the evolutionary relationship among various phyla

CO3. Identify the role of natural selection in the survival of the species

CO4. Understand the various mechanism involved in evolution.

19IZOT 92: Environment & Biodiversity Conservation**Course outcome**

After successful completion of the course students shall be able to

CO1. Analyse and appreciate the basic ecological concepts

CO2. Critically assess environmental disasters and suggest counter measures

CO3. Develop a mind set to safeguard natural resources and take forward the concept of sustainable development

CO4. Protect the environment by acting against pollution

19IZOT 93: Animal Behaviours**Course Outcomes:**

At the end of the semester students shall be able to

CO1: Master the theoretical as well as practical knowledge in the field of animal behaviour

CO2: Interpret the genetic basis of behavioral patterns

CO3: Appreciate the socio-biological elements in the behavior of various animal groups and their significance.

CO4: Understand the impact of hormones in the manifestation of various behaviours

19IZOT 94: Biotechnology**Course Outcomes:**

At the end of the semester students shall be able to

CO1: Master the theoretical as well as practical knowledge in various field of biotechnology

CO2: Perform various experiments related to biotechnology

CO3: Carry out biotechnological applications in the fields of medicine, agriculture and environmental fields

CO4: Equip the students to take up jobs in various biotechnological companies and labs

19IZOT 101: Biochemistry**Course Outcomes:**

At the end of the semester students shall be able to

CO1: Able to understand various micro and macro molecules and their significance

CO2: Able to discriminate various metabolic disorders

CO3: To take up jobs in clinical labs

CO4: To analyze biological samples of bio-chemical importance

19IZOT 102: Endocrinology

Course Outcomes:

At the end of the semester students shall be able to

CO1: Master the theoretical and practical aspects of endocrinology across various phyla

CO2: Apply the endocrinological methods and procedures for higher studies and research

CO3: To take up jobs in clinical labs

CO4: To analyze biological samples of endocrinological importance

19IZOTE15-1 Medical Entomology

Course Outcomes:

At the end of the semester students shall be able to

CO1: Identify insects based on morphological features

CO2: Start entrepreneurial activities in sericulture and apiculture

CO3: Take up jobs in vector control and public health departments

CO4: Take up integrated pest management activities

Elective – 1 19IZOTE15-2 Bio-Physics

Course Outcomes:

CO1: To analyze the various forces responsible of biological molecular structure

CO2: To gain the knowledge of cellular permeability

CO3: To understand the dynamics of biological systems

CO4: To correlate the biomolecular structure to its specific functions

Elective – 2 19IZOTE35-1 Aquaculture

Course Outcomes:

CO1: Master the theoretical and practical aspects of fisheries across different species

CO2: Apply the Aquaculture methods and procedures for higher studies and research

CO3: To take up jobs in Aquaculture farms

CO4: To analyze biological samples of Aquaculture ponds

Elective – 2 19IZOTE35-1 Pisciculture

Course Outcomes:

CO 1: Take up employment in commercial fish farms

CO 2: Start entrepreneurship in fish farming sector.

CO 3: Identify common cultivable fishes

CO 4: Identify and manage common fish diseases

CO 5: Take up employment in industrial fisheries sector

CO 6: Start entrepreneurship involving harvesting and post harvesting technologies

Elective – 3 19IZOTE55-1 Bioinformatics

Course Outcomes:

CO1: Master the theoretical and practical aspects of Bio-informatics

CO2: Apply the Bio-uinformatical methods and procedures for higher studies and research

CO3: To take up jobs in medical industries

CO4: To analyze biological samples through bioinformatical importance

Elective – 3 19IZOTE55-1 Medical Laboratory Techniques

Course Outcomes:

CO1: Master the theoretical and practical aspects of endocrinology across various phyla

CO2: Apply the endocrinological methods and procedures for higher studies and research

CO3: To take up jobs in clinical labs

CO4: To analyze biological samples of endocrinological importance

19IZOTE84 -1 Entomology

Course Outcomes:

CO1: Identify insects based on morphological features

CO2: Start entrepreneurial activities in sericulture and apiculture

CO3: Take up jobs in vector control and public health departments

CO4: Take up integrated pest management activities

19IZOTE84-2 Public Health and Hygiene

Course Outcomes:

At the end of the semester students shall be able to

CO1: Analyse various common vectors and diseases, causing organisms

CO2: Impart skills the general Public for public health and hygiene

CO3: Work in clinical labs

CO4: Take up research on issues related to public health and hygiene

19IZOTE95-1 Fisheries and Aquaculture

Course Outcomes:

At the end of the semester students shall be able to

CO1: Understand and analyse various issues related to fisheries and aquaculture

CO2: Take up jobs in fisheries and aquaculture sectors

CO3: Start aquaculture activities on their own

CO4: Take up jobs in marine product export sectors

CO5: Take up research activities in various fisheries institutions and Universities

19IZOTE95-2 Toxicology

Course outcome

At the end of the semester students shall be able to

CO1: Carry out toxicological analysis of various environmental samples

CO2: Make observations and biochemical analysis of biological samples

CO3: Carry out toxicological testing using live specimen to determine toxicity of toxicants

CO4: Take up jobs in toxicological research institutions and clinical labs

19IZOA15: Ancillary Zoology- I (Animal Diversity-I)

Course Outcomes:

CO1: Identify a fauna based on morphological character

CO2: Identify poisonous and non- poisonous snakes

CO3: Identify extinct fauna

CO4: Distinguish primitive mammals

CO5: Understand origin of chordates

19IZOA16: Ancillary Zoology Paper-II

Course Outcomes:

CO1: Identify various organelles and their functions

CO2: Correlate developmental patterns in animals

CO3: Understand evolutionary process taking place in biological world

CO4: Analyse the anatomical details of human

CO5: Critically evaluate genetic principles involved in multiple alleles and sex determination

19IZOOX815 : Animal Culture Techniques**Course Outcomes:**

CO1: Start entrepreneurial activities involving solid waste management and Vermicomposting

CO2: Take up apiculture as a profession

CO3: Take up sericulture

CO4: Start aquaculture

19IZOOX915: Environmental Science**Course Outcomes:**

CO1: Identify environmental issues

CO2: Appreciate wild life and natural resources

CO3: Develop talent to conserve nature

CO4: Provide basic environmental education to the society

VALUE ADDED COURSE**19IPHYX915.1: BIO- Medical Instrumentation****Course Outcomes:**

CO1: Understand the structure and physiological functioning of various organ systems of human body

CO2: Master the common bio-separation techniques used for clinical applications

CO3: Operate various medical equipments working on the principles of bio-electric Potentials

CO4: Understand the basic principles and operations of various imaging equipments used in the clinical field

CO5: Takeup jobs in various clinical labs, hospitals and related institutions

DEPARTMENT OF ZOOLOGY**M.Sc. ZOOLOGY****(TWO YEAR PROGRAMME)****19ZOO C101: Structure And Functions of Invertebrates and Vertebrates****Course Outcomes:**

At the end of the semester students shall be able to

CO1: Understand the morphological features and physiological features like Respiration, reproduction and nervous system of invertebrates and Vertebrates

CO2: Understand the various salient features of higher invertebrates and Vertebrates

CO3: Differentiate the patterns of functioning of various organ systems in invertebrates and vertebrates

CO4: Know the structural organization and functioning of various organs in invertebrates and vertebrates.

19 ZOO C 102: Developmental Biology**Course Outcomes:**

CO1: Acquire knowledge on reproduction and development

CO2: Understand process of fertilization

CO3: Understand the whole process of embryogenesis

CO4: Acquisition of skills in common methods and practices followed in developmental biology related laboratory activities and Take up jobs in fertility clinics and research labs

19 ZOO C 103: Cell and Molecular Biology**Course Outcomes:**

- CO1: Acquire knowledge on cellular structure and functions.
- CO2: Understand the process of energetic and genesis in cells
- CO3: Interpret the structural and functional significances of DNA and RNA
- CO4: Take up jobs in molecular biology labs and clinical labs

19 ZOO C 201: Animal Physiology

Course Outcomes:

At the end of the semester students will be able to

- CO1: Understand the normal physiological functions and necessity to maintain a healthy Life
- CO2: Get an opportunity to understand various factors that could lead to altered physiological functions and thereby health problems
- CO3: Perform various physiological experiments and observations
- CO4: Take up jobs in clinical labs and research institutes

19 ZOO C 202: Genetics

Course Outcomes:

At the end of the semester students will be able to

- CO1: Interpret phenotypic expressions based on genotype
- CO2: Understand and interpret genetically linked diseases
- CO3: Perform blood group analysis and test metabolic disorders
- CO4: Working clinical laboratories and take up researches

19 ZOO C 203: Immunology

Course Outcomes:

At the end of the semester students shall be able to

- CO1: Analyse the various in immunological issues
- CO2: Apply immunological procedures for various immunological testing procedures
- CO3: To Interpret the results of immunological experiments and Take up jobs in clinical labs and related institution
- CO4: Carry out immunological investigation and Equip themselves for higher studies

19ZOO301: Evolution

Course outcome

After successful completion of the course students shall be able to

- CO1. Analyse the evolutionary history of biological organisms
- CO2. Critically assess the evolutionary relationship among various phyla
- CO3. Identify the role of natural selection in the survival of the species
- CO4. Understand the various mechanism involved in evolution.

19ZOO302: Environment & Biodiversity Conservation

Course outcome

- CO1. Analyse and appreciate the basic ecological concepts
- CO2. Critically assess environmental disasters and suggest counter measures
- CO3. Develop a mind set to safeguard natural resources and take forward the concept of sustainable development
- CO4. Protect the environment by acting against pollution, Take up employment in environment related agencies and institution and Educate the public regarding the importance of rain water harvesting and water Conservation

19ZOO303: Animal Behaviours

Course Outcomes:

At the end of the semester students shall be able to

CO1: Master the theoretical as well as practical knowledge in the field of animal behaviour

CO2: Interpret the genetic basis of behavioral patterns

CO3: Appreciate the socio-biological elements in the behavior of various animal groups and their significance.

CO4: Understand the impact of hormones in the manifestation of various behaviours

19ZOOC304: Biotechnology

Course Outcomes:

CO1: Master the theoretical as well as practical knowledge in various field of biotechnology

CO2: Perform various experiments related to biotechnology

CO3: Carry out biotechnological applications in the fields of medicine, agriculture and environmental fields

CO4: Equip the students to take up jobs in various biotechnological companies and labs

19ZOOC401: Biochemistry

Course Outcomes:

At the end of the semester students shall be able to

CO1: Able to understand various micro and macro molecules and their significance

CO2: Able to discriminate various metabolic disorders

CO3: To take up jobs in clinical labs

CO4: To analyze biological samples of bio-chemical importance

19ZOOC402: Endocrinology

Course Outcomes:

At the end of the semester students shall be able to

CO1: Master the theoretical and practical aspects of endocrinology across various phyla

CO2: Apply the endocrinological methods and procedures for higher studies and research

CO3: To take up jobs in clinical labs

CO4: To analyze biological samples of endocrinological importance

19ZOOE215-1: Entomology

Course Outcomes:

At the end of the semester students shall be able to

CO1: Identify insects based on morphological features

CO2: Start entrepreneurial activities in sericulture and apiculture

CO3: Take up jobs in vector control and public health departments

CO4: Take up integrated pest management activities

19ZOOE215-2: Public Health and Hygiene

Course Outcomes:

At the end of the semester students shall be able to

CO1: Analyse various common vectors and diseases, causing organisms

CO2: Impart skills the general Public for public health and hygiene

CO3: Work in clinical labs

CO4: Take up research on issues related to public health and hygiene

19ZOOE315-1: Fisheries and Aquaculture

Course Outcomes:

At the end of the semester students shall be able to

CO1: Understand and analyse various issues related to fisheries and aquaculture

CO2: Take up jobs in fisheries and aquaculture sectors
CO3: Start aquaculture activities on their own
CO4: Take up jobs in marine product export sectors and also Take up research activities in various fisheries institutions and Universities

19ZOOE315-2: Toxicology

Course outcome

At the end of the semester students shall be able to

CO1: Carry out toxicological analysis of various environmental samples
CO2: Make observations and biochemical analysis of biological samples
CO3: Carry out toxicological testing using live specimen to determine toxicity of toxicants
CO4: Take up jobs in toxicological research institutions and clinical labs

19ZOOE216-1 : Animal Culture Techniques Learning Objectives

Course Outcomes:

At the end of the semester students shall be able to

CO1: Start entrepreneurial activities involving solid waste management and Vermicomposting
CO2: Take up apiculture as a profession
CO3: Take up sericulture
CO4: Start aquaculture

19ZOOE316-1: Environmental Science

Course Outcomes:

CO1: Identify environmental issues
CO2: Appreciate wild life and natural resources
CO3: Develop talent to conserve nature
CO4: Provide basic environmental education to the society

Bio-Medical Instrumentation

Course Outcomes:

At the end of the semester students will be able to :

CO1: Understand the structure and physiological functioning of various organ systems of human body
CO2: Master the common bio-separation techniques used for clinical Applications
CO3: Operate various medical equipments working on the principles of bio-electric potentials
CO4: Understand the basic principles and operations of various imaging equipments used in the clinical field and also take up jobs in various clinical labs, hospitals and related institutions

19IPHYX915.1: BIO- Medical Instrumentation

Course Outcomes:

CO1: Understand the structure and physiological functioning of various organ systems of human body
CO2: Master the common bio-separation techniques used for clinical applications
CO3: Operate various medical equipments working on the principles of bio-electric Potentials
CO4: Understand the basic principles and operations of various imaging equipments used in the clinical field
CO5: Take up jobs in various clinical labs, hospitals and related institutions

M.Sc. ZOOLOGY
(TWO YEAR PROGRAMME)

19ZOOC101: Structure And Functions of Invertebrates and Vertebrates

Course Outcomes:

At the end of the semester students shall be able to

CO1: Understand the morphological features and physiological features like Respiration, reproduction and nervous system of invertebrates and Vertebrates

CO2: Understand the various salient features of higher invertebrates and Vertebrates

CO3: Differentiate the patterns of functioning of various organ systems in invertebrates and vertebrates

CO4: Know the structural organization and functioning of various organs in invertebrates and vertebrates.

19 ZOO C 102: Developmental Biology

Course Outcomes:

CO1: Acquire knowledge on reproduction and development

CO2: Understand process of fertilization

CO3: Understand the whole process of embryogenesis

CO4: Acquisition of skills in common methods and practices followed in developmental biology related laboratory activities and Take up jobs in fertility clinics and research labs

19 ZOO C 103: Cell and Molecular BIOLOGY

Course Outcomes:

CO1: Acquire knowledge on cellular structure and functions.

CO2: Understand the process of energetic and genesis in cells

CO3: Interpret the structural and functional significances of DNA and RNA

CO4: Take up jobs in molecular biology labs and clinical labs

19 ZOO C 201: Animal Physiology

Course Outcomes:

At the end of the semester students will be able to

CO1: Understand the normal physiological functions and necessity to maintain a healthy Life

CO2: Get an opportunity to understand various factors that could lead to altered physiological functions and thereby health problems

CO3: Perform various physiological experiments and observations

CO4: Take up jobs in clinical labs and research institutes

19 ZOO C 202: Genetics

Course Outcomes:

At the end of the semester students will be able to

CO1: Interpret phenotypic expressions based on genotype

CO2: Understand and interpret genetically linked diseases

CO3: Perform blood group analysis and test metabolic disorders

CO4: Working clinical laboratories and take up researches

19 ZOO C 203: Immunology

Course Outcomes:

At the end of the semester students shall be able to

CO1: Analyse the various immunological issues

CO2: Apply immunological procedures for various immunological testing procedures

CO3: To Interpret the results of immunological experiments and Take up jobs in clinical

labs and related institution

CO4: Carry out immunological investigation and Equip themselves for higher studies

19ZOOC301: Evolution

Course Outcomes:

After successful completion of the course students shall be able to

CO1. Analyse the evolutionary history of biological organisms

CO2. Critically assess the evolutionary relationship among various phyla

CO3. Identify the role of natural selection in the survival of the species

CO4. Understand the various mechanism involved in evolution.

19ZOOC302: Environment & Biodiversity Conservation

Course outcome

CO1. Analyse and appreciate the basic ecological concepts

CO2. Critically assess environmental disasters and suggest counter measures

CO3. Develop a mind set to safeguard natural resources and take forward the concept of sustainable development

CO4. Protect the environment by acting against pollution, Take up employment in environment related agencies and institution and Educate the public regarding the importance of rain water harvesting and water Conservation

19ZOOC303: Animal Behaviours

Course Outcomes:

At the end of the semester students shall be able to

CO1: Master the theoretical as well as practical knowledge in the field of animal behaviour

CO2: Interpret the genetic basis of behavioral patterns

CO3: Appreciate the socio-biological elements in the behavior of various animal groups and their significance.

CO4: Understand the impact of hormones in the manifestation of various behaviours

19ZOOC304: Biotechnology

Course Outcomes:

CO1: Master the theoretical as well as practical knowledge in various field of biotechnology

CO2: Perform various experiments related to biotechnology

CO3: Carry out biotechnological applications in the fields of medicine, agriculture and environmental fields

CO4: Equip the students to take up jobs in various biotechnological companies and labs

19ZOOC401: Biochemistry

Course Outcomes:

At the end of the semester students shall be able to

CO1: Able to understand various micro and macro molecules and their significance

CO2: Able to discriminate various metabolic disorders

CO3: To take up jobs in clinical labs

CO4: To analyze biological samples of bio-chemical importance

19ZOOC402: Endocrinology

Course Outcomes:

At the end of the semester students shall be able to

CO1: Master the theoretical and practical aspects of endocrinology across various phyla

CO2: Apply the endocrinological methods and procedures for higher studies and research

CO3: To take up jobs in clinical labs
CO4: To analyze biological samples of endocrinological importance

19ZOOE215-1: Entomology

Course Outcomes:

At the end of the semester students shall be able to
CO1: Identify insects based on morphological features
CO2: Start entrepreneurial activities in sericulture and apiculture
CO3: Take up jobs in vector control and public health departments
CO4: Take up integrated pest management activities

19ZOOE215-2: Public Health and Hygiene

Course Outcomes:

At the end of the semester students shall be able to
CO1: Analyse various common vectors and diseases, causing organisms
CO2: Impart skills the general Public for public health and hygiene
CO3: Work in clinical labs
CO4: Take up research on issues related to public health and hygiene

19ZOOE315-1: Fisheries and Aquaculture

Course Outcomes:

At the end of the semester students shall be able to
CO1: Understand and analyse various issues related to fisheries and aquaculture
CO2: Take up jobs in fisheries and aquaculture sectors
CO3: Start aquaculture activities on their own
CO4: Take up jobs in marine product export sectors and also Take up research activities in various fisheries institutions and Universities

19ZOOE315-2: Toxicology

Course outcome

At the end of the semester students shall be able to
CO1: Carry out toxicological analysis of various environmental samples
CO2: Make observations and biochemical analysis of biological samples
CO3: Carry out toxicological testing using live specimen to determine toxicity of toxicants
CO4: Take up jobs in toxicological research institutions and clinical labs

19ZOOE216-1 : Animal Culture Techniques Learning Objectives

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CO4: Understand the basic principles and operations of various imaging equipments used in the clinical field and also takeup jobs in various clinical labs, hospitals and related institutions