

Programme specific outcomes of MSc Zoology

1. Understand the biological diversity and grades of complexity of various animal forms through their systematic classification and comparative structural studies.
2. Learn how earth was formed and how life started and evolved on the planet through process of organic evolution.
3. 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.
4. Understand the concepts and principles of biochemistry, immunology, physiology, ethology, endocrinology, developmental biology, cell biology, genetics, molecular biology and microbiology.
5. Develop technical skills in biotechnology, bioinformatics and biostatistics.
6. Delve into the wonderful world of insects, their success on the planet and their diversity .
7. Acquire knowledge on harmful and beneficial insects, their adaptations for life and control measures.
8. 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 Entomology.

Semester I**PG1ZOOC01 M.Sc. ZOOLOGY****BIOSYSTEMATICS AND ANIMAL DIVERSITY****90 Hours****Credit – 4****Objectives:**

- Acquire a thorough understanding of the principles and practices of systematics
- Provide an in-depth knowledge on the diversity and relationships in animal world
- Develop a holistic appreciation on the phylogeny and adaptations in animals
- Understand the taxonomic procedures to identify a species.
- Acquire the skills of nomenclature of species and sub species.

Semester I**M.Sc. ZOOLOGY****PG1ZOOC02 - EVOLUTIONARY BIOLOGY AND ETHOLOGY****90 Hours****Credit- 4****Course Outcomes**

- Understand the process and theories in evolutionary biology
- Develop an interest in the debates and discussions taking place in the field of evolutionary biology
- Equip the learners to critically evaluate the debates and take a stand based on science and reason
- Get exposed to the basics and advances in ethology.

Generate an interest in the subject in order to understand the complexities of both animal and human b

Semester I**M.Sc. ZOOLOGY**
PG1ZOOC03 - BIOCHEMISTRY**90 Hours****Credit- 4****Course Outcomes**

- Understand the chemical nature of life and life process
- Develop an idea on structure and functioning of biologically important molecules
- Generate an interest in the subject and help students explore the new developments in Biochemistry.
 - Create curiosity in antioxidants and their role in cure of diseases.
- Inculcate an interest for further research.

Semester I**M.Sc. ZOOLOGY**
PG1ZOOC04. BIostatistics, Computer Application and Research Methodology**90 Hours****Credit-4****Course outcomes**

- Impart concepts, generate enthusiasm and make awareness about the tools/gadgets and accessories of biological research
- Equip the learner to carry out original research in biology
- Inculcate analytical and critical thinking skills through problem solving
- Acquire hands on training in the use of various tools and techniques suggested in the course.
- Develop skills to solve scientific problems with statistical formulas.

Semester II**M.Sc. ZOOLOGY
PG2ZOOC05- ECOLOGY: PRINCIPLES AND PRACTICES****90 Hours****Credit- 4****Course outcomes**

- Understand the basic theories and principles of ecology
- Get acquainted with various disciplines in ecology
- Learn current environmental issues based on ecological principles
- Gain critical understanding of human influence on environment
- Acquire skills to solve environmental issues.
- Understand the environmental laws and try to apply them in current issues.

Semester II**M.Sc. ZOOLOGY
PG2ZOOC06- GENETICS AND BIOINFORMATICS****90 Hours (5hrs/week)****Credit- 4****Course outcomes**

- Get an in-depth understanding on the principles and mechanisms of inheritance
- Understand the fine structure and molecular aspects of genetic material
- Learn the importance of inheritance in Man
- Expose the learners to the emerging field of bioinformatics and equip them to take up bioinformatic studies.

SEMESTER II**M.Sc. ZOOLOGY****PG2ZOOC07- DEVELOPMENTAL BIOLOGY****90 Hours (5hrs/week)****Credit - 4****Course outcomes**

- Learn the concepts and process in developmental biology
- Understand and appreciate the genetic mechanisms and the unfolding of the same during development
- Create awareness on new developments in embryology and its relevance to Man
- Acquire knowledge on teratogenesis and generate awareness in society.
- Understand the causes of infertility and can take preventive measures.

SEMESTER II**M.Sc. ZOOLOGY****PG2ZOOC08-****BIOPHYSICS, INSTRUMENTATION AND BIOLOGICAL TECHNIQUES****90 Hours****Credit- 4****Course outcomes**

- Learn the biophysical properties and functioning of life processes
- Acquire skills in tools and techniques available for studying biochemical and biophysical nature of life
- Equip the learner to use the tools and techniques for project work/ research in biology
- Get skills in Histological & biochemical techniques.
- Learn the application of radiations in Medical treatments.

SEMESTER III

M.Sc. ZOOLOGY

PG3ZOOC09- ANIMAL PHYSIOLOGY

90Hours. (5hrs/week bCredit-4

Course outcomes

- Learn to compare the functioning of organ systems across the animal world
- Get an over view of the comparative functioning of different systems in animals
- Learn more about human physiology, disorders and the preventive measures.
- Create awareness about physiological corrective measures in society.
- Understand the basic levels of various factors for proper functioning of body.

SEMESTER III

M.Sc. ZOOLOGY

PG3ZOOC10 - CELL AND MOLECULAR BIOLOGY

90 Hours

Credit-4

Course Outcomes

- Learn the structural and functional details of the basic unit of life at the molecular level
- Motivate the learner to refresh and delve into the basics of cell biology
- To introduce the new developments in molecular biology and its implications in human welfare
- Provide a thorough knowledge on types and properties of Cancer and how normal cells become cancerous.
- Learn new strategies in cancer treatments.

SEMESTER III

M.Sc. ZOOLOGY

PG3ZOOC11-MICROBIOLOGY AND BIOTECHNOLOGY

72 Hours (4hrs/week)

Credit- 4

Course outcomes

- Provide an over view of the microbial world, its structure and function
- Familiarize the learner with the applied aspects of microbiology
- Give students an intensive and in-depth learning in the field of biotechnology

- Understand the modern biotechnology practices and approaches with an emphasis in technology application, medical, industrial, environmental and agricultural areas
- Learn the students with public policy, biosafety, and intellectual property rights issues related to biotechnology

SEMESTER III

M.Sc. ZOOLOGY

PG3ZOOC12- IMMUNOLOGY

Total: 54 Hours. (3hrs./ week).

Credit- 3

Course outcomes

- Provide an intensive and in-depth knowledge to the students in immunology
- Understand the role of immunology in human health and well-being
- Familiarize the students the new developments in immunology
 - Learn the way body fights foreign bodies.
 - Understand the risks in transplantation of organs.

SEMESTER IV

PG4ZOOC13 ELECTIVE: ENTOMOLOGY I MORPHOLOGY AND TAXONOMY

90 Hours (5 hrs/week)

Credit -4

Course outcomes

- Understand the insect diversity and its significance
- Learn the economic and medical importance of insects
- Learn about the pests of crops and vectors of diseases and their control measures
- create skills for scientific study of insects

Credit 4

SEMESTER IV

PG4ZOOC14 ELECTIVE: ENTOMOLOGY II ANATOMY AND PHYSIOLOGY

90 Hours (5 hrs/week)

Course outcomes

Credit -4

- Understand the general

organization of insect body

- Learn why and how the insects have become successful.
- Know the different physiological systems of insect body.
- Understand the differentiated functions of each system in terms of adaptations .
- Learn the varied kinds of developments in insects

- **SEMESTER IV**

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- **PG4ZOOC15 ELECTIVE : ENTOMOLOGY III**

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- **APPLIED ENTOMOLOGY**

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(5hrs/week)

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outcomes

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- **Learn how insects become pests.**
- **Aquaint with the common pests of our crops and the damage caused.**
- **Learn various methods to control the pests.**
- **Aquire skills to manage the pest outbreak.**
- **Familiarise with the insecticide appliances.**
- **Learn the importance of insects in medical and veterinary fields.**
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90 Hours

Course

Credit - 4