

SYLLABUS

M.Sc. Course in Zoology

(Four Semester Course)

(Course Learning Outcome)

(Choice Based Credit System)

KRISHNAGAR GOVERNMENT COLLEGE

SEMESTER- I

THEORY

ZCORT-101: Non-Chordate Biology and Insect Organization

Course Learning Outcomes: The course is designed to prepare the students with knowledge and skills of non-chordate physiology for exploring and assessing biodiversity and ecosystem health. There are emerging scopes of jobs as biologists and ecologists with good taxonomic knowledge in India and abroad.

ZCORT-102: Parasitology, Ecology, Environment, and Wildlife Biology

Course Learning Outcomes: The course will provide information on the diversity and biology of parasites, epidemiology and mode of transmission of parasitic diseases, and preventive measures. Students will be exposed to the fundamental aspects of ecology. They will get an idea about the impact of anthropogenic activities on the environment. Students will get an idea about the natural resources and their conservation.

ZCORT 103: Developmental Biology and Cytogenetics

Course Learning Outcomes: Developmental Biology enquires about the fundamental processes that underpin the fertilization of an egg cell and its step-by-step transformation into the fascinating complexity of a whole organism. After completing the course, the students should gain ample knowledge and understanding of the factual basis of embryonic development and its relevancy with differential gene expression in various model organisms which would provide them with immense opportunity to take up active research in molecular embryology in the future. Successful completion of the curriculum of Cytogenetics, the students should have a comprehensive idea of structural and functional aspects of biological macromolecules and genomes which would help them to embark and reach new avenues in the field of molecular biology and cytogenetics in their future research.

ZCORT 104: Animal Physiology, Biochemistry and Metabolic Processes

Course Learning Outcome: After going through this course, the students will understand how systems in animals work and how these animals' biology is influenced by the different environments. The students will be able to explore an original query in animal physiology. The students will appreciate the molecular makeup of the physiological systems and will

understand what forms the systems and allows them to function. After going through this course in Biochemistry and Metabolic Processes, the student would be able to understand the inter-relationships between different metabolic pathways that play important roles in living systems. Also, the students will be able to predict and understand which particular pathway will function under a specific condition. They will be able to predict the futuristic outcome of the failure of metabolic pathways. Consequently, a scheme of intervention for metabolic failure can be predicted and this course may encourage students to find molecules that modulate the metabolic pathways eventually resulting in the design of drugs.

ZAECCT-101: Basic principles of methods used in animal biology

Course Learning Outcome: The students will be able to gain a comprehensive knowledge on techniques widely used in biological research and clinical understanding. On completion of the course, they would be able to understand and analyse the basic principles of methods and experiments used in understanding the molecular mechanisms of cellular processes.

PRACTICAL

ZCORL 101: Non-Chordate Biology and Insect Organization

Course Learning Outcome: The section will provide fundamental ideas about the body organization of non-chordates.

ZCORL 102: Parasitology, Ecology, Environment, and Wildlife Biology

Course Learning Outcomes: The students will adapt with practical knowledge of parasitology, ecology, environment, and wildlife biology.

ZCORL 103: Developmental Biology & Cytogenetics

Course Learning Outcomes: The practical training would assist in a proper understanding of the theoretical knowledge and equip them with hands-on experience in the areas of developmental biology and cytogenetics.

ZCORL 104: Animal Physiology, Biochemistry & Metabolic Processes

Course Learning Outcomes: This course will help in advancing our knowledge on physiology and biochemistry. Further, course will equip the students to know how different changes in the environment can bring changes to the physiology of the animals and how different factors can modulate the biochemical processes.

SEMESTER-II

THEORY (CORE)

ZCORT-205: Chordate Biology, Biosystematics and Taxonomy

Course Learning Outcomes: Knowledge on the diversity, morphology, anatomy, and physiology of different chordate groups will be of immense help for students in understanding the animal world and to pursue further studies and research directly linked to human welfare such as disease control, animal husbandry, and functional studies. By learning basic principles of biosystematics and taxonomy, the most important discipline of biological science, students will better understand the diversity of all life forms and will be able to identify unknown taxa and make new discoveries. Thus, the students can make significant contribution to science and society in their future ventures as researcher, entrepreneur, and teacher.

ZCORT 206: Advanced Parasitology, Vector biology and Fish Biology

Course Learning Outcome: Upon successful completion of this course the students would be able to learn about transmission, epidemiology, diagnosis, clinical manifestations, pathology, treatment and control of major parasites. The student would be able to understand about the fish biology and their importance. The course has been structured in a way that the students assimilate the classroom knowledge for applied aspects of parasitology, public health and fish biology.

ZCORT 207: Immunobiology, Human Genetics & Biostatistics

Course Learning Outcomes: Upon completion of the course, the students will have a good knowledge of the essential elements of the immune system, preparing them to engage further in this rapidly evolving field. Human genetics will impart knowledge about the human chromosome constitution that would help in applying basic principles of chromosome behaviour to disease context. The course also expected to give application-based learning of biostatistics, or the use of numerical techniques to extract information from data and facts. The students can apply this knowledge in their fields of research and higher education.

THEORY (GENERIC ELECTIVE)

ZGECT 201: Applied Zoology (For students other than Department of Zoology)

Course Learning Outcomes: This part is a culmination of basic and applied skill-based zoology that has emerging scopes of jobs as biologists.

PRACTICAL (CORE)

ZCORL 205: Chordate Biology, Biosystematics and Taxonomy

Course Learning Outcomes: Knowledge on the anatomy of any model chordate animal, particularly fish, will be of immense help for students in pursuing research and study in any field of animal science. By learning the basic principles of taxonomic keys, the students can

make significant contributions to science and society by discovering new taxa and also to explore the faunal diversity of any ecosystem.

ZCORL 206: Advanced Parasitology and Fish Biology

Course Learning Outcomes: Upon successful completion of this lab content students would be able to trained to diagnose, identify and detect some important parasites and also different fish physiological organs.

ZCORL 207: Immunobiology, Human Genetics and Biostatistics

Course Learning Outcomes: The students are expected to gather practical knowledge on Antigen-antibody interactions, antibody generations and blood grouping factors and detection mechanism in human at the end of this course. The course will also deliver sound understandings on human chromosome groups, chromosomal aberrations and mapping of genes. Further, the course should help students on using the statistical principles choose suitable tools and techniques in collecting data, summarizing, analyzing, and interpreting them, at the same feel confident about facing questions and problems in medicine, public health or biology.

SEMESTER-III

THEORY (CORE)

ZCORT-309: Arthropod of Economic Importance, Concept of Biodiversity and Evolution

Course Learning Outcomes: Knowledge on the morphology, bionomics, and control measures of various economically important arthropods, particularly insect pests and vectors, will be beneficial in planning better pest control strategies, economic growth, and management of insect vector borne diseases. Additionally, the knowledge on culture techniques like Apiculture, Sericulture, Lac culture will assist in the development of entrepreneurship. By learning the basic concepts of animal diversity and evolution, the students will better understand the fundamentals of life processes and will be able to undertake advance research and study in the field of organic evolution, particularly microbes of human interest, and will be able to make significant contribution to science through new findings and discoveries.

ZCORT-310: Environmental Toxicology and Endocrinology

Course Learning Outcomes: At the end of the course the students will be able to Understand basic concepts of toxicants, know different toxicological testing procedures. gather knowledge about fate and interaction of toxicants in our body, learn toxicants-induced damage of organs, develop the ability of critical thinking about plant allelochemicals, gather concept of various hormones (neurohormones, local hormones etc.) & their receptors. Be able to understand deep knowledge about biosynthesis, structure & function of hormones and their mechanism of action.

THEORY (DISCIPLINE SPECIFIC ELECTIVE - MINOR)

ZDSE(MN)T 301: Applied Ichthyology

Course Learning Outcomes: Students will be exposed to the Origin, Evolution and Distribution of the fishes. They will get idea about the Ornamental fish culture, fish nutrition and aquaculture methods.

ZDSE(MN)T 302: Developmental Dynamics

Course Learning Outcomes: After completing the course the students shall be able to elucidate the relationship of developmental biology strategies and their applicability in different forms of biology.

ZDSE(MN)T 303: Human Molecular Genetics

Course Learning Outcomes: This course is expected to deliver knowledge of how organisms, populations and species evolve, besides providing answer some of the most fundamental questions on human genome, disease and functions of gene.

ZDSE(MN)T 304: Forest Entomology

Course Learning Outcome: Forest Entomology plays a major role in training students in understanding the importance of forest plants including timber yielding trees and their interaction with nature and different types of forest insect in contrast to manage forest

vegetation from nuisance, invasive alien species seriously threaten forestry ecosystems, biodiversity, and cause significant economic losses.

ZDSE(MN)T 305: Medical and Veterinary Parasitology

Course Learning Outcomes: Upon successful completion of this course the students would be able to learn pathological changes associated with parasite infections and achieved an analytical view on the role of vectors and intermediate hosts in parasite transmission.

ZDSE(MN)T 306: Reproductive Biotechnology

Course Learning Outcomes: Students of this class will be able to understand the importance of technology in the maintenance and upgradation of reproductive health in human and animals. This course will make them suitably knowledgeable about cell culture techniques, cloning techniques, preservation of eggs and sperms, artificial reproductive technologies to undertake the therapeutic research jobs in various pharmaceutical companies as well as in hospitals in addition to the IVF centres.

THEORY (DISCIPLINE SPECIFIC ELECTIVE – MAJOR I)

Course Learning Outcomes: Students will learn about the Fisheries Resources of India, aquatic organism, cold water fisheries and limnology. And the information about the various aquatic resources viz. rivers, lakes, reservoirs. The knowledge of physiology equips the young generation for the propagation of fish.

ZDSE(MJ)T 301: Cytogenetics and Molecular Biology

Course Learning Outcomes: The student would be able to understand genetic organisation and underscore the importance through genomics, transcriptomics and proteomics. The students are expected to appreciate the importance of cell-cell adhesion and the extracellular matrix in cellular organizations. The course will enhance the students' understanding about the genome composition and the functions of microbes.

ZDSE(MJ)T 301: Endocrinology and Reproductive Biology

Course Learning Outcomes: This course will help in advancing knowledge on endocrine systems employing the hormone-receptor interactions. Further, Endocrine Physiology during stress, calcium homeostasis, growth will equip the students to know how residue of pharmaceuticals, estrogenic compounds coming from indiscriminate use of polythene and other pollutants present in the ecosystems are severely affecting the hormone secretion and leading to various endocrine disorders.

ZDSE(MJ)T 301: Parasitology and Immunology

Course Learning Outcomes: Upon successful completion of this course the students assimilate the classroom knowledge for applied aspects of parasitology and public health. The course will provide an understanding of the diversity and biology of parasites, besides the epidemiological aspects of different parasitic diseases would be explored and students will be able to gain knowledge regarding the mode of transmission of parasitic diseases and preventive measures.

ZDSE(MJ)T 301: Entomology

Course Learning Outcomes: Knowledge on the classification and diversity of insects along with their evolution pattern will be beneficial planning better pest control strategies and economic growth of the country. Additionally, the knowledge on insect physiology will be advantageous in designing and discovery of bio-control agents and management of vector borne diseases. By learning the basic concepts of insect science, the students will be one step ahead regarding their scope in joining the agricultural industry and other research institutes concerned with discoveries of insecticides (NCL, CIL, IARI, IPFT, IGSMRI etc.) and taxonomy of insects (ZSI, BSI, FRI).

ZDSE(MJ)T 301: Cell and Development Biology

Course Learning Outcomes: At the end of the course the students should have an overview of the recent advance techniques, their principles and their application methods which would draw a keen in them towards higher academic pursuit.

THEORY (DISCIPLINE SPECIFIC ELECTIVE – MAJOR II)

ZDSE(MJ)T 302: Fish and Fisheries

Course Learning Outcomes: All the basic information gathered in this paper will be utilized in the ZEI 301 paper of fish and fisheries. The study of culture techniques of various aquatic organisms helps in the production of healthy food for human consumption in a sustainable manner and also in employment generation. The students will be exposed to fish pathology and the modern immunological technique that is the need of the day to control disease related problems in the field.

ZDSE(MJ)T 302: Cytogenetics and Molecular Biology

Course Learning Outcomes: The course will deliver the students to correlate phenotype with genotype, understand genetic interaction and their molecular basis of interactions. They will also know how mutations in genes can lead to diseases and provide an edge to pursue a career in the field of cancer biology.

ZDSE(MJ)T 302: Endocrinology and Reproductive Biology

Course Learning Outcomes: Students will be experts in techniques associated with endocrine research. They would also have fair knowledge on hormonal signalling associated with tumorigenesis. This course will provide students an edge to pursue a career in the field of Endocrinology in diagnostic centres associated with understanding endocrine anomalies.

ZDSE(MJ)T 302: Parasitology and Immunology

Course Learning Outcomes: Upon successful completion of this course the students would be able to learn about transmission, epidemiology, diagnosis, clinical manifestations, pathology, treatment and control of major parasites like protozoa and helminth. The course has been structured in a way that the students assimilate the classroom knowledge for applied aspects of protozoology, helminthology and public health.

ZDSE(MJ)T 302: ENTOMOLOGY

Course Learning Outcomes: Knowledge on the reproduction and hormonal regulation in insects will be extremely advantageous in planning pest and vector control strategies and also in discovery of biocontrol agents. By learning the concepts of insect science stated in this paper, the students will be among the first choice for recruiters from the agricultural industry and other research institutes concerned with discoveries of insecticides (NCL, CIL, IARI, IPFT, IGSMRI etc.) and taxonomy of insects (ZSI, BSI, FRI).

ZDSE(MJ)T 302: Cell and Developmental Biology

Course Learning Outcomes: The students would build a foundation for a better understanding of the different processes involved in early development, their regulatory mechanism and different factors involved therein which would guide them to implant the knowledge of major milestones associated with cell and developmental biology.

THEORY (SKILL ENHANCEMENT COURSE)

ZSECT 301: Industrial/Economic Zoology

Course Learning Outcomes: On completion of the course, the students will be able to undertake certain startups in the field of industrially and economically important fish, insects and animal culture, rearing and breeding. As they will gain expertise on various techniques of pisciculture, apiculture, sericulture, lac culture and animal breeding, they could be among the first choice for recruiters from firms and institutes concerned in this field.

PRACTICAL (CORE)

ZCORL 309: Arthropod of Economic Importance, Concept of Biodiversity and Evolution

Course Learning Outcomes: Knowledge on the morphology of various insect pests and damage symptoms caused by them will be beneficial in planning better pest control strategies and economic growth. Additionally, the knowledge on Sericulture technique will assist in the development of entrepreneurship in this field. By hands on training in PBR and techniques of population study, the students will be able to undertake advance research and study in the field of animal conservation.

ZCORL 310: Environmental Toxicology and Endocrinology

Course Learning Outcomes: At last, the students will be able to: Estimate various types of toxicity testing in test organisms and learn about harmful effects of toxicants on laboratory animals.

Fish and Fisheries

ZDSE(MJ)L 301: LAB

Course Learning Outcomes: All the practical information of aquaculture gathered in this paper. This study will to their practical life and also in research career. The students adapted with scientific research, review of research papers. They will be familiar with any type of professional interaction.

Cytogenetics and Molecular Biology

ZDSE(MJ)L 301: LAB

Course Learning Outcomes: After successful completion of the course the candidate should be able get basic knowledge of the molecular and cytogenetics tools for studying the characteristic structural features of each chromosome the organizations in normal, mutant and cancer cells. It will help them to analyse human karyotype to detect gross genetic changes such as chromosomal deletion, duplication, translocation or inversion etc. which provides a source of diagnostic information for specific birth defects, genetic disorders and even cancers. They will also have an idea of isolating plasmid DNA, purification and studying genetic polymorphism in population practically and by solving numerical problems. The Seminar presentation will give them a foundation in preparing for their higher studies, data presentation and communication skills development.

Endocrinology and Reproductive Biology

ZDSE(MJ)L 301: LAB

Course Learning Outcomes: Students will be well-trained to work in research fields associated with basic and clinical endocrine research. Also, this training will allow them to pursue careers in diagnostic clinics associated with understanding endocrine disorders or other clinical manifestations at molecular level. Students will develop the concept of searching scientific articles, making presentations, deliver the same and interact with the audience by answering to the various queries of the audience. Students are expected to become confident about presenting a scientific work and handle forthcoming interviews in their careers.

Parasitology and Immunology

ZDSE(MJ)L 301: LAB

Course Learning Outcomes: Upon successful completion of this lab content students would be able to trained to diagnose, identify and detect some important parasites. Students will able to gain knowledge regarding various laboratory instruments, preparations of chemical and also adopt some preservations technique.

Entomology

ZDSE(MJ)L 301: LAB

Course Learning Outcomes: Students will be trained to work in different areas of entomology. Students will develop ideas on current entomological research and projects. They will also be trained to deliver scientific lectures.

Cell and Developmental Biology

ZDSE(MJ)L 301: LAB

Course Learning Outcomes: Students are expected to relate basics of molecular biology tools of their theoretical knowledge with that of practical training. Additionally, this training

would also help them to explore new techniques which would elicit their urge towards deeper understanding and reaching out for troubleshooting on their own.

SEMESTER-IV

THEORY (CORE)

ZCORT-411: Animal Behaviour and Microbiology

Course Learning Outcomes: After successful completion of this course the students will be able: to understand animals' complicated behaviour, degree of inter-specific and intra-specific relationship among the animals, to know the facts behind learning and memory. Learn to maintain their hygienic environment and know about biology of microorganisms and their interaction with animals and human.

ZCORT-412: Molecular Biology, Biotechnology, Tools and Technique

Course Learning Outcomes: After successful completion of the course the candidate should be able to design and comprehend experimental strategies for alteration of genes and gene products in variety of organisms. The students will be able to have a comprehensive understanding about the techniques widely used in biological research and clinical understanding. At the end of the course, they would gain knowledge about the techniques and experiments that contributed to the understanding of molecular mechanisms of the cellular processes and be able to draw parallels between the physiological processes at the cellular and organismic levels. They will have in depth understanding of this rapidly changing field of modern biology and fast evolving tools and techniques for analysis of macromolecules, cells as well as understanding how bioinformatics can act as an efficient research tool.

ZDSE(MN)T 407: Agricultural Entomology

Course Learning Outcomes: Agricultural Entomology plays vital role in training students in understanding relationship of nature, plants and insects to ensure plant protection in agricultural field. The course study makes the students capable to identify different field crop pests and their damage symptoms, pest management techniques and beneficial role of natural enemies in pest management.

ZDSE(MN)T 408: Cancer Biology and Medical Genetics

Course Learning Outcomes: This course will decipher current knowledge on disease treatment including cancer.

ZDSE(MN)T 409: Medical Embryology

Course Learning Outcomes: The students shall have an overall idea in the area of medical sciences which have been explored in diagnostic and therapeutic application in embryologic stage.

ZDSE(MN)T 410: Aquaculture Technology

Course Learning Outcomes: At the completion of Aquaculture Technology, students will be able to: K now about different technology of Aquaculture that will help to their research activity and also in practical life if they are engage in fish farming related activity.

ZDSE(MN)T 411: Hormone and Signal Transduction

Course Learning Outcomes: At the end of the course the students will –gather concept of various types of hormones & their receptors, be able to understand deep knowledge about hormone signalling and know about neuroendocrine disorders as well as its regulation by immune system.

ZDSE(MN)T 412: Parasites and Diseases

Course Learning Outcomes: Upon successful completion of this course the students would be able to learn pathological changes associated with parasite infections and achieved a analytical view on the role of vectors and intermediate hosts in parasite transmission.

THEORY (DISCIPLINE SPECIFIC ELECTIVE – MAJOR I)

ZDSE(MJ)T 403: Fish and Fisheries

Course Learning Outcomes: After completion of this paper students will be able to: K now about different fishing crafts, gears, Environmental Impact of Aquaculture, fish preservation, processing methods and about different fish by-products that will help to gaing knowledge in fishing activity and in their research activity.

ZDSE(MJ)T 403: Cytogenetics and Molecular Biology

Course Learning Outcomes: This part of syllabus will enhance the knowledge on epigenetics and related mechanisms basically of the students who are studying Cytogenetics and molecular biology as specialization.

ZDSE(MJ)T 403: Endocrinology and Reproductive Biology

Course Learning Outcomes: At the end of the course the students will be able to-learn about hormones and their receptors, gather knowledge about biosynthesis, structure, function and their complex signalling pathways, understand hormonal regulation of reproductive functions.

ZDSE(MJ)T 403: Parasitology and Immunology

Course Learning Outcomes: Upon successful completion of this course the students would be able to learn about transmission, epidemiology, diagnosis, clinical manifestations, pathology, treatment and control of major zoonotic diseases. The course has been structured in a way that the students assimilate the classroom knowledge for applied aspects of public health and some future aspects of lab to land implication of their knowledge.

ZDSE(MJ)T 403 Entomology

Course Learning Outcomes: The course study makes the students capable to learn ill effects of pesticides and management of crop pests by bio-rational methods in an integrated approach (IPM) and impart concerned knowledge to the farmers and get involved in various pest management organizations.

ZDSE(MJ)T 403: Cell and Developmental Biology

Course Learning Outcomes: The students should be able to connect the metabolic reprogramming and development of diseases through the lens of epigenetic modification and gene expression strategies.

THEORY (DISCIPLINE SPECIFIC ELECTIVE – MAJOR II)

ZDSE(MJ)T 404: Fish and Fisheries

Course Learning Outcomes: Marine Fisheries and Oceanography, Marketing and conservation of aquatic resources is most essential in the present scenario of climate change and anthropogenic activities. India has long coastline with many fish landing centres that help in the livelihood and income generation.

ZDSE(MJ)T 404: Cytogenetics and Molecular Biology

Course Learning Outcome: Students will get knowledge on genetic basis and advances in the research on early development and growth of organism. From the second unit they can be enlightened with the idea of genetic makeup in the environment and population.

ZDSE(MJ)T 404: Endocrinology and Reproductive Biology

Course Learning Outcomes: At the end of the course the students will be able to-learn about hormonal regulations of reproduction, gather knowledge about hormonal regulation of biorhythm, understand hormonal regulation of neuroendocrine regulation of immune system and know hormonal regulation of stem cells.

ZDSE(MJ)T 404: Parasitology and Immunology

Course Learning Outcomes: At the end of the course, the students should be able to identify the cellular and molecular basis of immune responsiveness and understand how the innate and adaptive immune responses coordinate to fight invading pathogens.

ZDSE(MJ)T 404 Entomology

Course Learning Outcomes: Agricultural and applied Entomology plays a major role in training students in understanding the interaction of nature, plants and insects in order to ensure crop protection by controlling economically important insect pests of various crops.

ZDSE(MJ)T 404: Cell and Developmental Biology

Course Learning Outcomes: The students should be well versed with the multi parametric cellular signaling pathways involved in metabolic pathways, their malfunctioning, their detection with the aid of recent sophisticated diagnostic tools with special emphasis to cancer biology which would encourage the students to pursue a research career in future.

PRACTICAL (CORE)

ZCORL 411: Animal Behaviour and Microbiology

Course Learning Outcomes: The course provides the students training on Animal Behaviour and Microbiology. Microbiological training will help to advantages on getting industrial job.

ZCORL 412: Molecular Biology, Biotechnology, Tools and Technique

Course Learning Outcomes: The course provides the students with the necessary training to enable them to understand the principles that underpin basic and applied research, and to translate that understanding into good research practice.

Fish and Fisheries

ZDSE(MJ)L 402: Lab

Course Learning Outcomes: All the practical information about biochemical and molecular mechanisms of aquaculture gathered in this paper. This study will help to their research career. The students adapted with scientific research, review of research papers. They will be familiar with any type of professional interaction.

Cytogenetics and Molecular Biology

ZDSE(MJ)L 402: Lab

Course Learning Outcome: The students also get exposed to the tissue culture methods and techniques of identification of proteins on paper and solution by antigen-antibody reaction. After that the specific topic is presented through power point mode and the merit of the review paper is evaluated.

Endocrinology and Reproductive Biology

ZDSE(MJ)L 402: Lab

Course Learning Outcomes: At the end of this course the students will learn various histochemical techniques and their demonstration, acquire comprehensive practical knowledge in molecular endocrinology. understand various types of practical knowledge related to endocrinology and reproductive physiology.

Parasitology and Immunology

ZDSE(MJ)L 402: Lab

Course Learning Outcomes: Upon completion of the course students have a sound understanding of the essential elements of the immune system, preparing them to engage further in this rapidly evolving field. The course also has a strong lab component, where certain classical and interesting exercises will be conducted to answer various practical queries in animal physiology.

Entomology

ZDSE(MJ)L 402: Lab

Course Learning Outcomes: The students will gain knowledge on diversity of insects, their ecology, collection techniques and taxonomic procedures. The students will submit a review work on specific topic of entomology and will present that through power point in their final exam. The merit of the review work will be evaluated by examiners.

Cell and Developmental Biology

ZDSE(MJ)L 402: Lab

Course Learning Outcomes: At the end of the course the students should be able to design research problems independently and find out the solution of the same. The overall training would help them to explore different molecular techniques which would definitely help them in their future research endeavour.