

DEPARTMENT OF ZOOLOGY, ST. ALOYSIUS COLLEGE, EDATHUA

COURSE OUTCOME OF B.SC ZOOLOGY, MODEL –II AQUACULTURE

ZOOLOGY CORE

SEMESTER - 1

ZY1CRT01: GENERAL PERSPECTIVES IN SCIENCE & PROTISTAN DIVERSITY

- 1.1. Create curiosity to learn the philosophy of Science, its concepts and scope.
- 1.2. Able to develop scientific attitude and perspectives
- 1.3. Acquire knowledge on different levels of biological diversity through the systematic classification.
- 1.4. Develop interest in learning protistan diversity and parasitic forms of lower invertebrates.

SEMESTER- 2

ZY2CRT02: ANIMAL DIVERSITY- NON CHORDATA

- 2.1. Create curiosity in learning the Non-Chordate diversity of life.
- 2.2. Able to analyse the diversity of life and their biological importance.
- 2.3. Acquire knowledge on the evolutionary significance of invertebrate fauna.
- 2.4. Able to identify various non-chordate phyla based on their general characters and classification.

SEMESTER-3

ZY3CRT03: ANIMAL DIVERSITY- CHORDATA

- 3.1. Develop interest to learn about the classification, diversity and systematic position of chordates.

- 3.2.Acquire knowledge about fish diversity and their structural modifications to lead aquatic life.
- 3.3.Able to identify the morphological and anatomical organization of frog, rabbit etc.
- 3.4. Acquire knowledge on the economic importance of some chordate classes and adaptations of selected vertebrates such as birds, aquatic mammals etc.

SEMESTER -4

ZY4CRT04: RESEARCH METHODOLOGY, BIOPHYSICS AND BIOSTATISTICS

- 4.1 Develop aptitude for natural inquiry about biological phenomena in a scientific way
- 4.2 Acquire knowledge on various research designs and different steps involved in writing a project proposal.
- 4.3 Develop aptitude for research communication.
- 4.4 Able to apply statistical methods in biological studies.
- 4.5 Acquire skills for the effective use of different types of biological techniques.

SEMESTER -5

ZY5CRT05: ENVIRONMENTAL BIOLOGY AND HUMAN RIGHTS

- 5.1 Develop interest in observing biodiversity, for learning environmental issues and conservation strategies.
- 5.2 Acquire knowledge about natural resources, their protection, conservation, factors polluting the environment, their impacts and control measures.
- 5.3 Aware about toxicology, its impact on human health and remedial measures
- 5.4 Develop real sense of Human rights- its concepts & manifestations.

ZY5CRT06: CELL BIOLOGY AND GENETICS

- 6.1 Able to analyse the phenomenon of life on a Cellular perspective.
- 6.2 Able to understand the need for protecting cells and tissues of the body.
- 6.3 Become aware of the role of genes in the transmission of characters from parents to offsprings.
- 6.4 Develop knowledge about human genetic disorders and how they affect the well being of an individual.

ZY5CRT07: EVOLUTION, ETHOLOGY AND ZOOGEOGRAPHY

- 7.1 Acquire knowledge about the evolutionary history of earth - living and nonliving evolutionary concepts and theories.
- 7.2 Aware about the distribution of animals on earth, its pattern, evolution and causative factors.
- 7.3 Able to analyse various types of animal behavior.
- 7.4 Acquire knowledge on the mechanism and factors affecting evolution.

ZY5CRT08: HUMAN PHYSIOLOGY, BIOCHEMISTRY AND ENDOCRINOLOGY

- 8.1 Acquire knowledge on the basic principles of biochemistry useful for biological studies different kinds of food, their structure, function and metabolism.
- 8.2 Become aware about the structure and function of various organs and organ systems of man.
- 8.3 Able to analyse the need for balanced diet, mental health and exercise.
- 8.4 Acquire a broad understanding of the hormonal regulation of physiological processes in man.

ZY5OPT01: VOCATIONAL ZOOLOGY (Apiculture, Vermiculture, & Ornamental Fish Culture)

ZY5OPT01.1 Able to develop curiosity for learning about those animals that are economically important.

ZY5OPT01.2 Acquire skills in aquarium management, vermicomposting and apiculture for self-employment.

ZY5OPT01.3 Acquire knowledge about resources available for ornamental fish culture, vermicomposting and apiculture.

ZY5OPT01.4 Acquire skill for waste management through vermiculture and organic farming.

SEMESTER -6

ZY6CRT09: DEVELOPMENTAL BIOLOGY

9.1 Acquire knowledge on how a single celled zygote forms multicellular organisms?

9.2 Develop knowledge about the environmental influence on prenatal life.

9.3 Able to understand prenatal birth defects and diagnosis.

9.4 Acquire knowledge on the recent trends in stem cell research and its applications.

ZY6CRT10: MICROBIOLOGY AND IMMUNOLOGY

10.1 Acquire knowledge about the Methods in Microbiology: Sterilization and disinfection - physical and chemical methods.

10.2 Able to differentiate different types of Culture media, isolation of pure colony and culture preservation techniques etc.

10.3 Aware about epidemiology, symptomology, diagnosis and treatment of Bacterial disease - tetanus, Viral disease – AIDS, fungal – candidiasis.

10.4 Able to understand about the types of vaccines, Current Vaccines and Recent trends in vaccine preparation.

10.5 Able to understand the structure, types and functions of antibodies.

ZY6CRT11: BIOTECHNOLOGY, BIOINFORMATICS AND MOLECULAR BIOLOGY

11.1 Acquire knowledge about recombinant DNA technology and its significance.

11.2 Aware of various biological databases

11.3 Acquire knowledge on the flow of information from DNA to RNA and RNA to proteins.

11.4 Aware about the structure of DNA and different types of RNA

ZY6CRT12: OCCUPATIONAL ZOOLOGY (Aquaculture, Apiculture, Vermiculture &

Quail farming)

12.1 Develop interest in the field of applied zoology as a means of self employment.

12.2 Acquire scientific knowledge on apiculture.

12.3 Aware about the scope of ornamental fish culture.

12.4 Create interest in waste management through the application of vermiculture.

12.5 Acquire knowledge and interest in Quail farming.

ZY6CBT03: NUTRITION, HEALTH & LIFESTYLE MANAGEMENT

ZY6CBT03.1 Acquire knowledge on general concept of health and various parameters that define health and wellness.

ZY6CBT03.2 Able to differentiate various types of nutrients and its role in health.

ZY6CBT03.3 Acquire knowledge regarding food safety, food laws & regulations.

ZY6CBT03.4 Acquire knowledge on how to attain good life style practices, physical fitness and healthy food habits?

AQUACULTURE - Vocational

SEMESTER 1

ZA1VO1U : PRINCIPLES AND METHODS IN AQUACULTURE

ZA1VO1U.1. Acquire knowledge about the scope and importance of aquaculture.

ZA1VO1U.2. Develop knowledge about the concept of recycling organic waste for maximum aquatic production.

ZA1VO1U.3. Able to develop knowledge about how to construct and prepare a pond for fish culture?

ZA1VO1U.4. Acquire knowledge on various types of cultivable finfish and shell fish.

ZA1VO2U: HATCHERY AND CULTURE TECHNIQUES

ZA1VO2U.1. Acquire knowledge on the culture practices of various indigenous edible and ornamental finfishes and edible shellfishes.

ZA1VO2U.2. Create awareness on different technologies of seed production of common cultivable species.

ZA1VO2U.3. Acquire knowledge on various live feeds available for aquatic organisms and understand their culture methods.

ZA1VO2U.4. Able to understand the techniques of Culture of Crustaceans and Bivalve mollusks

SEMESTER -2

ZA2VO3U- CAPTURE FISHERY

ZA2VO3U.1. Acquire knowledge on various types of craft and gears used in capture fishery.

ZA2VO3U.2. Aware about inland capture fishery resources and marine fishery resources of India

ZA2VO3U.3. Acquire knowledge about how to manage and conserve fishery resources?

ZA2VO3U.4. Develop skill to identify different types of commercially important marine shell fishes.

ZA2VO4U: BIOLOGY OF FISHES

ZA2VO4U.1. Create curiosity for learning the morphological and anatomical organization of finfishes and shellfishes.

ZA2VO4U.2. Acquire knowledge on the basic principles of Taxonomy of cultivable organisms.

ZA2VO4U.3. Aware about the natural food of fishes and the pattern of growth

ZA2VO4U.4. Acquire knowledge on the reproductive biology of fishes

SEMESTER-3

ZA3VO5U-FISHERIES ENVIRONMENT

ZA3VO5U.1. Acquire knowledge about the ecology of fresh water habitat and marine habitat.

ZA3VO5U.2. Develop knowledge about the instruments used in marine biological sampling.

ZA3VO5U.3. Create knowledge about remote sensing techniques and satellite remote sensing of fish stocks.

ZA3VO5U.4. Able to know about ecological indicator organisms and also about basic marine meteorology.

ZA3VO6U- FISH NUTRITION

ZA3VO6U.1. Create interest to learn about the nutritional needs of aquatic organisms in culture.

ZA3VO6U.2. Aware about the basic concept of energy budgeting, food additives and varieties of feed ingredients used in Aqua feeds.

ZA3VO6U.3. Acquire knowledge on the principles of feed formulation and equipments used in feed manufacture.

ZA3VO6U.4. Create knowledge on various growth promoters that can be applied in fish feed

SEMESTER-4

ZA4VO7U: REPRODUCTIVE PHYSIOLOGY AND ENDOCRINOLOGY

ZA4VO7U.1. Acquire knowledge on variety of reproductive techniques in finfishes and shellfishes and the factors controlling reproduction.

ZA4VO7U.2. Aware about the endocrine and neurosecretory system of finfishes and shellfishes.

ZA4VO7U.3. Create knowledge about the embryonic development of fishes

ZA4VO7U.4. Acquire knowledge on the techniques of induced breeding, and cryopreservation of fish gametes.

ZA4VO8U: MICROBIOLOGY, PATHOLOGY AND POSTHARVEST TECHNOLOGY

ZA4VO8U.1. Acquire knowledge on biochemical composition of fishes.

ZA4VO8U.2. Able to differentiate the characteristics of fresh fish and spoilage fish.

ZA4VO8U.3. Create knowledge about various agencies involved in fish spoilage.

ZA4VO8U.4. Acquire knowledge on various methods used in fish processing and preservation.

ZA4VO8U.5. Develop skill to identify various fish diseases and learns its remedial measures.