EVEN SEMESTER 2021-2022

TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : **Dr.Madhuramozhi Govindarajalu**

Department : **Zoology**

Programme : **M.Sc**

Programme Code : **PSZ**

Name of the Paper : **APPLIED BIOTECHNOLOGY**

Lecture Hours : **90 Hrs**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To give an intensive and in-depth learning in the field of biotechnology • To understand the modern biotechnology practices and approaches with an emphasis in technology application, medical, industrial, environmental and agricultural areas • To familiarize the students with public policy, biosafety, and intellectual property rights issues • To understand the commercial protection of organic compound using microbes. • To learn the process of bioremediation.	• Understand advance technique and its application in the field of biotechnology. • Understand the modern biotechnology practices and approaches with an emphasis in technology application, medical, industrial, environmental and agricultural areas. • Familiarize the students with public policy, biosafety, and intellectual property rights issues. • Job offer: BCG vaccine Laboratory, Chennai. Pasteur Institute Ooty, Clinical laboratory, Medical Research Centre, IVF laboratory, Research Assistant/ JRF/SRF/ in the Research Institute of ICAR, ICMRE, VCRC, TIFR, CCMB, Fisheries University and Research centre.	• Power Point • E – Module • Chalk & Talk Method • Lecture Method • Discussion Method • Study Assignment Method, • Problem Solving Method • Seminar Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Content- 15 hrs. Assessment – 3 hrs Total - 18 hrs	• Hybridoma technology. • Monoclonal and polyclonal antibodies. • Gene Therapy. • Transgenic animals. • Embryonic stem cell	05.01.2021 to 23.01.2021	3 3 3 3 3		
Unit II Content- 15 hrs. Assessment – 3 hrs Total - 18 hrs	• Genetically Modified Microorganisms. • Phytoremediation. • Bio fertilizer • Nitrogen fixing bactreia • Bio pesticides	25.01.2021 to 08.02.2021	3 3 3 3 3		
Unit III Content- 15 hrs. Assessment – 3 hrs Total - 18 hrs	• Fermentation technology. • Fermentors • Production of organic compounds. • Ethanol and acetone production • Single Cell Protein	09.02.2021 to 17.03.2021	3 3 3 3 3		
Unit IV Content- 15 hrs. Assessment – 3 hrs Total - 18 hrs	• r-DNA technology. Recombinant • DNA proteins. • Recombinant vaccines. • Production of penicillin. • DNA finger printing.	18.03.2021 to 01.04.2021	3 3 3 3 3		
Unit V Content- 15 hrs. Assessment – 3 hrs Total - 18 hrs	• Bioremediation Effluent treatment • Using genetically modified microbes. Intellectual Property Rights. • Patents. • Industrial design rights. • Trade secrets.	02.04.2021 to 16.04.2021	3 3 3 3 3		

D. ACTIVITIES:

Activities Name	Details
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) 17.5.2022 - 24.5.2022 CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February) Assignment II – Unit –III and Unit – IV (March)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

D. GENERAL INFORMATION

Name of the Faculty : **Dr.Madhuramozhi Govindarajalu**

Department : **Zoology**

Programme : **III-B.Sc**

Programme Code : **PSZ**

Name of the Paper : **Medical Lab Technology**

Lecture Hours : **75Hrs**

E. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To know the clinical use of instrumentation. • To study the analysis of blood, urine, sputum, semen and stool. • To study the nature and causes of various diseases.	• Acquired technical skills will help the students for collecting and processing biological specimens for analysis. • Understand fundamental analytical principles and processes used in clinical laboratory testing • Application of medical laboratory test will enable the students to understand normal and abnormal. • Students enable their critical and analytical thinking in the detection of diseases. • Application of medical laboratory procedures will enable the students to distinguish normal and abnormal microscopic pathogens	• Power Point • E – Module • Chalk & Talk Method • Lecture Method • Discussion Method • Study Assignment Method, • Problem Solving Method • Seminar Method

F. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Content- 12 hrs. Assessment – 3 hrs Total - 15 hrs	• Clinical Diagnostic equipments Sphygmomanometer Stethoscope • Compound microscope- Centrifuge- Hot air over- Autoclave- Incubator – Refrigerator- Laminar air flow Spectrophotometer • X-ray (Chest, Heart, Plain, Abdomen, Bones)- MRI & CT Scans - ECG and EEG	21.2.2022 to 18.3.2022	4 4 4		
Unit II Content- 12 hrs. Assessment – 3 hrs Total - 15hrs	• Collection of Blood - Blood grouping - blood bank Haemocytometer. • Total count of Blood cells (RBC & WBC). Differential count of WBC (Leishman s stain), Platelet count, Absolute Eosinphil counts, Packed cell volume, ESR • Determination of clotting time and Bleeding time. • Haemoglobimeter Hb	19.3.2022 to 30.3.2022	3 3 3 3		

	(Sahli's method)- Aneamias Diagital Glucometer - Blood glucose				
Unit III Content- 12 hrs. Assessment –3 hrs Total - 15 hrs	• Glucose tolerance test (Diabetes Mellitus), Atherosclerosis, Heart failure, Cholesterol, HDL, LDL, Urea, Creatine, Bile salts and Bile pigments. • Composition of Urine, Methods of Urine analysis for sugar, Urea & Albumin. Glucosuria fehling s test, Pregnency test and Widal test	31.3.2022 to 11.4.2022	6 6		
Unit IV Content- 12 hrs. Assessment – 3 hrs Total - 18 hrs	• General Examination Temperature, Pulse, BP (Normal, Hypertension and Hypotension), Edema and Jaundice. • Medical Emergencies Respiratory failure, Shocks, Acute Gastroenteritis (food poisoning), hemophilia, acute renal failure, Hypoglycemia, Amoebic dysentery, Snake bite, Rabies, Drowning. • Safety precautions and First aid treatment for Superficial Wounds,	12.4.2022 to 27.4.2022	4 4 4		

	Burns, Chemical poisoning and Electrical shock				
Unit V Content- 12 hrs. Assessment – 3 hrs Total - 18 hrs	• Diagnostic methods of Protozoan parasites- Malarial , E.histolytica Helminthes,- Ascaris, TapewormWuchereria and Hook Worm. • VDRL test, ELISA, Thyroid function test, Analysis of semen, Sputum and stools.	28.4.2022 to 10.5.2022	6 6		

D. ACTIVITIES:

Activities Name	**Details**
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February) Assignment II – Unit –III and Unit – IV (March)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : **Dr. S. ANGELINA GLORITA PARIMALA**

Department : **Zoology**

Programme : **B.Sc**

Programme Code : **PSZ**

Name of the Paper : **MBE- III - ECONOMIC ZOOLOGY**

Lecture Hours : **90 Hrs (5 UNITS)**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• Get knowledge about the Composite fish culture • To understand the status of lac industry • To identify commercially important molluscs • To gain the knowledge of Piggery	• Identify the host plants of lac insect • understand the advantages of molluscan fisheries and piggerry	• Power Point • e– Module • Chalk & Talk Method • Lecture Method • Discussion Method • Study Assignment Method • Problem Solving Method • Seminar Method • Demonstration Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Content- 15 hrs Assessment – 3 hrs Total - 18 hrs	• Composite Fish culture • Pond construction • Ornamental fish culture • Home aquarium	21.02.2022 to 28.02.2022	3 Hrs 3 Hrs 4 hrs 4 hrs		
Unit II	• Shrimp fishery • Species of Shrimp	01.03.2022 to	4 Hrs		

Content- 15 hrs Assessment – 3 hrs Total - 18 hrs	• Preservation & Processing of Shrimp • Mud crab culture	12.03.2022	3 Hrs 4 Hrs 4 Hrs		
Unit III Content- 15 hrs Assessment – 3 hrs Total - 18 hrs	• Classification of Lac insect • Details and Life history of lac insect • Cultivation of Lac • Economic importance of Lac	14.03.2022 to 25.03.2022	3 Hrs 3 Hrs 4Hrs 5 hrs	-	-
Unit IV Content- 15 hrs Assessment – 3 hrs Total - 18 hrs	• Pearl oyster culture • Edible oyster culture • Leather and wool industry • Rabbit farming	28.03.2022 to 07.04.2022	4 Hrs 3 Hrs 4 Hrs 4 Hrs	-	-
Unit V Content – 15 Hrs Assessment – 3 Hrs Total – 18 Hrs	• Details of country Pigs • Feeding management for Piggery • Slaughter of Pigs • Diseases of Pigs	11.04.2022 to 28.04.2022	3 Hrs 4 Hrs 4 Hrs 4 Hrs	-	-

D. ACTIVITIES:

Activities Name	Details
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February) Assignment II – Unit –III and Unit – IV (March)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : **Dr. S. ANGELINA GLORITA PARIMALA**

Department : **Zoology**

Programme : **M .Sc**

Programme Code : **PSZ**

Name of the Paper : **EC-V- COASTAL AQUACULTURE**

Lecture Hours : **90 Hrs**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To know the status of Aquaculture • To understand the culture techniques of fishes • To gain the knowledge on seabass culture • To know the techniques on Hatchery	• Understand the layout of Aquaculture • Understand the culture techniques on fisheries • Identify the different fish and shrimp culture	• Power Point • e– Module • Chalk & Talk Method • Lecture Method • Discussion Method • Study Assignment Method, • Problem Solving Method • Seminar Method • Demonstration Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remark
Unit I Content- 15 hrs Assessment – 3 Hrs Total - 18 hrs	• Importance of Aquaculture • Lay out for Aquaculture • Criteria for selecting Aqua farm	24.02.2022 to 04.03.2022	2 Hrs 5 Hrs 4 Hrs 4 Hrs	-	-

	• Seaweed culture				
Unit II Content- 15 hrs Assessment –3 hrs Total - 18 hrs	• Shrimp culture • Extensive and Intensive culture • Mono and Poly culture • Integrated farming	05.03.2022 to 14.03.2022	3 Hrs 4 Hrs 4 Hrs 4 Hrs	-	-
Unit III Content- 15 hrs Assessment – 3 hrs Total - 18 hrs	• Crab culture • Lobster culture • Milk fish culture • Sea bass culture	15.03.2022 to 28.03.2022	3 Hrs 3 Hrs 4 Hrs 5 Hrs	-	-
Unit IV Content- 15 hrs Assessment – 3 hrs Total - 18 hrs	• Induced maturation and Spawning • Hatchery management • Feed management • Live and formulated feeds	29.03.2022 to 11.04.2022	4 Hrs 4 Hrs 3 Hrs 4 Hrs	-	-
Unit V Content- 15 hrs Assessment – 3 hrs Total - 18 hrs	• Health management • Coastal zone management • Legal issues • Government Policies	12.04.2022 to 29.04.2022	3 Hrs 4 Hrs 4 Hrs 4 Hrs	-	-

D. ACTIVITIES:

Activities Name	Details
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February)
Quiz	Assignment II – Unit –III and Unit – IV (March)
Seminar	Two Mark Quiz Test - Unit I – Unit – V (May)
Tutor Ward Meeting	Unit –V (April-May) Monthly Once

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TEACHING PLAN

A. General Information:

Name of the Faculty	:	Dr.S.Krishnaveni
Department	:	Zoology
Programme	:	III – B.SC., Zoology
Name of the Paper	:	Animal Physiology
Programme code	:	USZ
Lecture Hours	:	90

B. About the course :

Course objectives	Course outcomes	Teaching Methodology
• To understand the basics of Physiology. • To study the structure and physiology of different Organs. • To acquire in depth knowledge about the endocrine glands and their role.	• Know the role of nutrition in human and its source, types and importance. To understand the mechanism of human respiration • To understand the blood circulation and excretion of human. • Recognize the complimentary relationship of structure and function of nerves and describe the interactions between different organ systems to maintain homeostasis • Able to explain the receptors and biological rhythms in response to internal and external environmental changes. • Know the role of hormones in reproduction of mammals.	• Power point • E-Modules • chalk and talk method • lecture method • Discussion method • study assignment method • seminar method

C. PLAN OF THE WORK

Unit /Modules	Topic to be covered	Proposed Date	Lecture Hours	Practical Hours	Remarks
Unit I Content- 15 hrs Assessment- 3 Hrs Total – 18 Hrs	• Nutrition • Vitamins • Respiration • Transport of O_2 and CO_2	5.4.2022 to 13.4.2022	4 4 4 3		-
Unit II Content- 15 hrs Assessment- 3 Hrs Total - 18 hrs	• Circulation • Excretion • Osmo regulation • Homeostasis	18.4.2022 to 4.5.2022	4 3 4 4		-
Unit III Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Muscle physiology • Chemistry of muscle • Muscle contraction • Nerve physiology • Reflex	5.5.2022 to 19.5.2022	3 3 4 3 2		-
Unit IV Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Receptor • Phonoreceptor • Photoreceptor • Rhythm • Photoperiodicity	20.5.2022 to 31.5.2022	3 3 4 3		-
Unit V Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Pituitary gland • Thyroid gland • Parathyroid gland • Adrenal and islets • Male reproductive system • Female reproductive system • Role of hormones in reproduction	1.6.2022 to 15.6.2022	4 4 3 4		

D . ACTIVITIES:

Activities Name	Details
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February) Assignment II – Unit –III and Unit – IV (March)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. General Information:

Name of the Faculty : Dr.S.Krishnaveni

Department : Zoology

Programme : II – M.SC., Zoology

Name of the Paper : Environmental Biology and Evolution

Programme code : PSZ

Lecture Hours : 90

B. About the course :

Course objectives	Course outcomes	Teaching Methodology
• To learn the limiting factors of the environment • Understand the basic concept of biodiversity and its indices • Learn the advanced technique of remote sensing and satellite image analysis • Understand the modern concept of origin of life	• To install the basic concepts of Environmental Sciences, Ecosystems, Natural Resources, Population, Environment and Society. • To make the students aware of natural resources, their protection, conservation, the factors polluting the environment, their impacts and control measures. • To teach the basic concepts of toxicology, their impact on human health and remedial measures • To create a consciousness regarding Biodiversity, environmental issues & conservation strategies • To develop the real sense of Human rights – its concepts & manifestation	• Power point • E-Modules • Chalk and talk method • Lecture method, • Discussion method • Study assignment method • Seminar method

C. PLAN OF THE WORK

Unit /Modules	Topic to be covered	Proposed Date	Lecture Hours	Practical Hours	Remarks
Unit I Content- 15 hrs Assessment- 3 Hrs Total – 18 Hrs	• Concepts of ecology • Population ecology • Community ecology	03.12.2021 to 07.01.2022	5 5 5		-
Unit II Content- 15 hrs Assessment- 3 Hrs Total - 18 hrs	• Habitat Ecology • Biodiversity • Wildlife Conservation • Pollution	08.01.2022 to 31.1.2022	4 4 3 4		-
Unit III Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Solid Waste Management • Status of solid waste management in India • Biomedical waste management	03.02.2022 to 18.2.2022	5 5 5		-
Unit IV Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Elements of Toxicology • Organophasphate • Effects of Toxic substance • Evaluation of toxicity • Determination of toxicity • Route of Entry of Toxicants	19.2.2022 to 20.3.2022	3 3 4 3 2		-
Unit V Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Excretion of toxicants • Safety Evaluation of Toxicants • Evaluation of combined toxicity	23.3.2022 to 23.4.2022	5 5 5		

D . ACTIVITIES:

Activities Name	Details
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February) Assignment II – Unit –III and Unit – IV (March)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : **Dr. S. VANITHA**

Department : **Zoology**

Programme : **B.Sc**

Programme Code : **USZ**

Name of the Paper : **CC II – Biology of Chordates**

Lecture Hours : **90 Hrs**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To impart current knowledge about the chordate animals of biological interest. • To know about the origin, systematic and functional morphology of various groups of chordates. • To study the salient features affinities and adaptations of chordates. • Able to describe the diversity in form structure and habits of vertebrates. • Skill to explain characteristics and classifications of different vertebrates	• Identify the general and specific characteristics of the different classes and the organization of the representative types • Recognize and describe the major groups of chordates • Understand the diversity of Chordates and its outline systematic. Discuss their affinities and adaptations to different modes of life. • Understand the unique features, taxonomy and functional morphology of different classes of chordates. • To infer the affinities, evolutionary relationships and adaptation of the major taxa and to explain their economic importance with respect to Chordates.	• Power Point • e– Module • Chalk & Talk Method • OHP • Lecture Method • Discussion Method • Study Assignment Method • Seminar Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Content- 15 hrs Assessment- 3 Hrs Total – 18 Hrs	Prochordates and cyclostomes, Origin of Chordates Protochordata - Distinctive features and affinities of Amphioxus, Balanoglossus and Ascidian. General Topic: Retrogressive metamorphosis in Ascidian. Cyclostomata - Distinctive features and affinities	21.02.2022 to 28.02.2022	3 Hrs 4 Hrs 4Hrs 4 Hrs	-	-
Unit II Content- 15 hrs Assessment- 3 Hrs Total - 18 hrs	Fishes and Amphibians, Gnathostomata- Detailed study of Scoliodon (shark) General Topic, Dipnoi and its affinities Accessory respiratory organs in fishes. Adaptive features of Apoda, Parental care in Amphibia.	01.03.2022 to 16.03.2022	4 Hrs 4 Hrs 3 Hrs 4 Hrs		
Unit III Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	Reptiles and Birds, Detailed study of Calotes and Detailed study of Pigeon Identification and distribution of poisonous and non- poisonous snakes of India, Poison apparatus	17.03.2022 to 29.03.2022	5 Hrs 5 Hrs 5 Hrs		
Unit IV Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	Mammals Detailed study of Rabbit. Dentition in Mammal. Aquatic mammals and their adaptations. Prototheria special	01.04.2022 to 19.04.2022	4 Hrs 3 Hrs 4 Hrs 4 Hrs	-	-

	features with examples.				
Unit V Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	Comparative Anatomy Comparative study of Heart and Brain in Shark, Frog, Calotes, Pigeon and Rabbit. Endoskeleton of Frog.	20.04.2022 to 24.05.2022	3 Hrs 4Hrs 4Hrs 4Hrs	-	-

D. <u>ACTIVITIES:</u>

Activities Name	**Details**
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February) Assignment II – Unit –III and Unit – IV (March)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty	:	Dr. S.VANITHA
Department	:	Zoology
Programme	:	M .Sc
Programme Code	:	PSZ
Name of the Paper	:	CC VI- Developmental Biology
Lecture Hours	:	90 Hrs

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To introduce the concepts and process in developmental biology • To understand the genetic mechanisms and the unfolding of the same during development • To expose the learner to the new developments in embryology and its relevance to Man. • To study the cell differentiation and tissue interactions in organ development • To know the health care and advanced technology in fertilization	• Understand the concepts and process in developmental biology • Understand the genetic mechanisms and the unfolding of the same during development • Expose the learner to the new developments in embryology and its relevance to Man • Job offer: IVF laboratory, Embryologists in O&G department in Medical College and Research • Centre, Research Assistant in Veterinary College and Research centre. Animal care taker	• Power Point • e– Module • Chalk & Talk Method • OHP • Lecture Method • Discussion Method • Study Assignment Method, • Seminar Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Content- 15 hrs Assessment- 3 Hrs Total – 18 Hrs	• Gametogenesis – Spermatogenesis – Cells in seminiferous tubules, spermiogenesis, structure and types of sperm Egg: Origin of egg - growth of oocyte - synthesis and accumulation of macromolecules in the oocyte – vitellogenesis -nuclear activities during oocytes growth. Hormonal and nervous control of ovulation • Egg as a developmental system: Organization of egg, cytoplasm before and after fertilization - polarity and symmetry of egg. • Egg cortex: Nature and role in amphibian development	21.02.2022 to 28.02.2022	5 Hrs 5 Hrs 5 Hrs	-	-
Unit II Content- 15 hrs Assessment- 3 Hrs Total - 18 hrs	• Fertilization:Bio-chemical aspects of egg activation - molecular events during fertilization. Polyspermy. • Fertilization : Events of fertilization- acrosome reaction in sperm – cortical reaction in egg - recognition of egg and sperm. • Physiological changes infertilization, theories of fertilization.	01.03.2022 to 10.03.2022	5 Hrs 5 Hrs 5 Hrs	-	-
Unit III Content- 15 hrs.	• Cleavage : Plan and Patterns - Chemical changes - role of nucleus and cytoplasm in cleavage –totipotency	11.03.2022 to	5Hrs	-	-

Assessment- 3 Hrs Total - 18 hrs	Nuclear transplantation – nuclear clones. Mechanisms and significance of Blastulation and Gastrulation. • Morphogenetic movements: selective affinity of cells - metabolism and gene activity during gastrulation. • Formation of germ layers in animals; embryogenesis	25.03.2022	5Hrs 5 Hrs		
Unit IV Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Organizer concept: Primary and secondary organizers - nature of induction - mechanism - gradients in the determination. • Tissue interactions: Lens development.Cell differentiation : Chemical and cellular factors- differential gene activity. • Ageing and alteration in developmental potentials: Gene regulation of aging. Senescence.	29.03.2022 to 08 .04.2022	5 Hrs 5 Hrs 5 Hrs	-	-
Unit V Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Precaution and health care during pregnancy and gestation. • Impotency: Causes of Impotency and sterility male and infertility in female – • Concept of test-tube baby - Artificial Insemination in humans – In Vitro Fertilization (IVF) and Gamete-Intra-Fallopian Transfer (GIFT) – Advantages and disadvantages.	19.04.2022 to 10.05.2022	3 Hrs 4Hrs 4Hrs	-	-

	• Teratogenesis- Developmental mechanism of teratogenesis. Contributions of teratology to developmental biology. Teratogens and induced birth defects.		4Hrs		

D. ACTIVITIES:

Activities Name	Details
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) 17.5.2022 - 24.5.2022 CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February) Assignment II – Unit –III and Unit – IV (March)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : Dr.K.G.Selvi

Department : Zoology

Programme : I B.Sc Chemistry – Allied Zoology

Programme Code : USZ

Name of the Paper : Entrepreneurial zoology

Lecture Hours : 60 Hrs

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• Acquired knowledge on the Earthworm and its economics. . • To generate employments opportunity in Apiculture. • To learn the biology and life cycle of lac culture and Sericulture. • To motivate to become entrepreneurs in Aquaculture • To develop skill in poultry farming.	• Know the vemi compost production and its economics. • Ability to generate employments opportunity in Apiculture. • Learn the lac culture and Sericulture. • Skill in Aquaculture production • Skill in poultry farming.	• Power Point • E – Module • Chalk & Talk Method • Lecture Method • Discussion Method • Assignment Method, • Problem Solving Method • Seminar Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Content- 15 hrs Assessment- 3 Hrs Total – 18 Hrs	• Vermiculture-Types : Eisenia fetida, Eudrilus ugenia, and *Perionyx excavates.* • Biology of Earthworm – Vermi composting - Required Conditions – Methods (pit and heap). • Advantages – Economic importance of vermin culture	21.02.22 to 11.03.22	3 3 3		
Unit II Content- 15 hrs Assessment- 3 Hrs Total - 18 hrs	• Apiculture – Species of Honey Bee, Types of Honey bee – Newton's Bee hive – Care and Management. • Honey extraction and Honey extracting equipments (Honey extractor, Smoker, Queen excluder, Drone excluder, Bee veil. • Nutritive and Medicinal value of Honey, Advantages –Economic importance of Apiculture.	12.03.22 to 28.03.22	3 3 3		
Unit III Content- 15 hrs.	• Lac Culture – Life cycle of Lac insect . Economic	29.03.22 to	6		

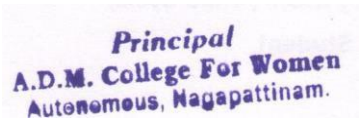
Assessment- 3 Hrs Total - 18 hrs	importance of Lac. • Sericulture: Life cycle of *Bombyx mori* – Economic importance of silk.	13.04.22	6		
Unit IV Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Aquaculture – Construction and Management of Pond. • Culture practices of Common Carp. • Shrimp Culture – *Penaeus mondon*- Pearl culture	18.04.22 to 12.05.22	3 3 3		
Unit V Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Poultry farming – Types of Poultry – Care and Management. • Poultry nutrition – Diseases and their management – Composition. • Nutritive value of egg- Economics of Poultry production	13.05.22 to 20.05.22	3 3 3		

D. <u>ACTIVITIES:</u>

Activities Name	Details
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units

Assignment	Assignment I –Unit –I and Unit –II (February)
Quiz	Assignment II – Unit –III and Unit – IV (March) Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

PRINCIPAL



TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : **Dr. K. G. Selvi**

Department : **Zoology**

Programme : **II M.Sc Zoology**

Programme Code : **PSZ**

Name of the Paper : **EC IV- Economic Entomology**

Lecture Hours : **90 Hrs**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To study the insect pests and their control measures. • To study the economic importance of insects as pollinators, predators and insect pests (vector borne diseases) and their control. • To study the basic concepts of pesticides and integrated pest control. • Familiar with culturing of economically important beneficial insect • To know the life cycle of harmful insect test	• Study the classification of insects • Understand the beneficial insect in detail • Learn how pest become harmful insect. • Learn integrated pest management methods • Understand the pest control measures and methods	• Power Point • E – Module • Chalk & Talk Method • Lecture Method • Discussion Method • Assignment Method, • Problem Solving Method • Seminar Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Content- 15 hrs Assessment- 3 Hrs Total – 18 Hrs	• Scope, An outline classification of insects. • Life cycle of a Hemipteran, Coleopteran and Lepidopteran pest (Two examples with mouth parts of insects- useful and harmful insects) and their interrelations with environments, • Insects as pollinators, Parasitoids, Scavengers and weed killers.	21.02.22 to 11.03.22	3 6 6		
Unit II Content- 15 hrs Assessment- 3 Hrs Total - 18 hrs	• Beneficial insects: • Sericulture – Types of silkworm. Life cycle and rearing of mulberry silkworm, Bombyx mori- Life cycle and rearing of non mulberry silkworm (Tasa - Antheraeamylitta); Cocoon processing for silk fabric – cocoon boiling, reeling, re	12.03.22 to 28.03.22	1 5		

	reeling, winding, doubling, twisting and weaving. • Apiculture – Types of honeybees. Life cycle, culture, movable frame hive, bee products and its economic importance • Lac culture : lac insect,- lacciferlacca – Life cycle, Lac processing, Lac products and Economic importance.		5 4		
Unit III Content- 15 hrs Assessment- 3 Hrs Total - 18 hrs	• Harmful insects – Pest of stored grains, Rice, Coconut, Cotton, Sugarcane, Pulse crops, Cereal crops, Oilseed crops and pest of Fruits and Vegetables. • Household pests of medical importance – Mosquito, Housefly, Cockroach, Ticks, Mites, Louse, Bed bug, Plasmodium, Filarial worm, Loa loa, Dust Mite.	29.03.22 to 13.04.22	8 7		

Unit IV Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Principles and methods of pest management – Principles of Insect control – Prophylactic measures – Conventional, Mechanical, Physical methods – Genetic control and Quarantine. • Biological control : Parasites, Predators and Microbial agents. • Chemical methods : Pesticides – general classification – classification based on mode of action, mode of entry and bio pesticides.	18.04.22 to 12.05.22	6 2 7		
Unit V Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Recent trends in pest control – Pheromones, Attractants, Repellants and Chemosterilants. • Integrated pest management and its importance & applications. • Assesment to pest population, Estimation of pest damage – Pest outbreak – Pest survelliance.	13.05.22 to 20.05.22	5 5 5		

D. <u>ACTIVITIES:</u>

Activities Name	Details
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February)
Quiz	Assignment II – Unit –III and Unit – IV (March) Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : **Dr.K.G.Selvi**

Department : **Zoology**

Programme : **I M.Sc Zoology**

Programme Code : **PSZ**

Name of the Paper : **EC I- Fishery Biology and Fish Processing Technology**

Lecture Hours : **90 Hrs**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To learn the fish techniques of different fishes. • To learn the management strategy. • To know the fish processing technique. • To learn the induce breeding technique and fish pathology. • To study the fish population, growth and stock assessment	• Understand the fish techniques of different fishes • Understand and familiarized with construction of pond and its management strategy • Hands on raining in fish processing technique • Familiarize with Induced breeding • Job offer: Self employment, Entrepreneur, Executive in fish products, Aquarist, Research Assistant in Fisheries university and Research centre, MPEDA, RGCA, CIBA, CMFRI	• Power Point • E – Module • Chalk & Talk Method • Lecture Method • Discussion Method • Assignment Method, • Problem Solving Method • Seminar Method • Seminar Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Content- 15 hrs Assessment- 3 Hrs Total – 18 Hrs	• World and Indian Fisheries – Prospects and Problems – Plans, Polices and Current Status of Indian Fisheries. • Marine fisheries ; Sardines, Mackerels, Sciaenids, Ribbonfish, Silver bellies, Pomfrets, Carangids, Sharks, Shrimps, Prawns, Crabs, Lobsters, Mussels and Clams • Inland fisheries ; Freshwater – riverine, reservoir, pond and cold water fisheries- Spawning and breeding habits of fishes. • Estuarine and brackish water fisheries and their economics.	21.02.22 to 11.03.22	4 4 4 3		
Unit II Content- 15 hrs Assessment- 3 Hrs Total - 18 hrs	• Culture fisheries : Integrated fish farming technology – rice – cum – brackish water fisheries, rice-cum-common carp culture. • Fish –cum-duck culture, Sewage – fed fisheries . • Mmonosex culture – polyculture.	12.03.22 to 28.03.22	4 4 4		

	• Ornamental fish culture and its economics		3		
Unit III Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Fish Gears and Crafts used in South Indian Fisheires. • Fish endocrinology – Induced breeding – technicques – examples. • Fish Pathology : Parasites – Protozoan, fungal, bacterial, worms and arthropods.	29.03.22 to 13.04.22	5 5 5		
Unit IV Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	• Assessment of fish stocks : Marking and recapture method, area sampling method, biostatistical method, egg count method, hydroacoustic method, remote sensing. • Age and Growth : Scale method, otolith method, other skeletal parts as age indicators, length – frequency method, length – weight relationship and condition factor. • Population studies: estimation of population size, marking, tagging, population dynamics, population models.	18.04.22 to 12.05.22	5 5 5		
Unit V	• Fish Processing and Preservation technology	13.05.22 to	4		

Content- 15 hrs. Assessment- 3 Hrs Total - 18 hrs	Salting, Icing, Sun drying, Smoking, Canning, Tinning, and Freezing techniques • Cold Storage, Brine water, brief account on transport and marketing. • Lay out of Processing Plant – Factory Hygiene and Sanitation, • Fish products and by products	20.05.22	4 4 3		

D. <u>ACTIVITIES:</u>

Activities Name	**Details**
Test	Monthly Test- Unit-I (February) Monthly Test - Unit-II (March) CIA / Mid Semester – Unit-I - Unit-III (First 1/2 Unit)- 2 ½ Units (April) Monthly Test– Unit –IV (May) **17.5.2022 - 24.5.2022** CIA / Model Examination -Unit-III(Second 1/2 Unit) –Unit-V- 2 ½ Units
Assignment	Assignment I –Unit –I and Unit –II (February)
Quiz	Assignment II – Unit –III and Unit – IV (March) Two Mark Quiz Test - Unit I – Unit – V (May)
Seminar	Unit –V (April-May)
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : **Dr. T.SUMATHI**

Department : **Zoology**

Programme : **B.Sc**

Programme Code : **USZ**

Name of the Paper : **DEVELOPMENTAL BIOLOGY IMMUNOLOGY**

Lecture Hours : **90Hrs (5 UNITS)**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• Understand the fundamentals of development • Understand the factors involving in regulation of development process • Understand the basics of immune system • Understand the role of immunity in human,	• Develop critical understanding how a single-celled fertilized egg becomes an embryo and then a fully formed adult. • Understand how development affects organization of phenotypes and their variation. • Aware of the reproductive cycle, hormones, Birth control	• Power Point • e– Module • Chalk & Talk Method • Lecture Method • Discussion Method • Study Assignment Method, • Problem Solving Method • Seminar Method • Demonstration Method

C. PLAN OF THE WORK:

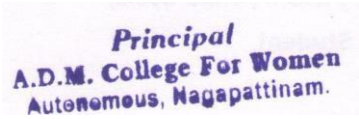
Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Gametogenesis – Spermatogenesis ,. Oogenesis. • Structure of human sperm and ovum. • Types of Eggs. Fertilization • Physiological changes.	21.02.2022 to 28.02.2022	3 Hrs 4Hrs 4Hrs 3 Hrs		
Unit II Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Cleavage – Planes and patterns –Blastulation in Frog. • Gastrulation in frog and chick up to the formation of three germ layers. • Fate map in Frog . Organogenesis • Eye and Brain in Frog	01.03.2022 to 12.03.2022	4 Hrs 3 Hrs 3 Hrs 4 Hrs		
Unit III Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Foetal membranes in mammals, Reproductive Cycles • Mensrual cycle, Placentation. • Hormonal control of reproduction • Precaution and Health care during Pregnancy and Gestation. Birth Control.	14.03.2022 to 25.03.2022	4Hrs 3 Hrs 4Hrs 3Hrs	-	-

Unit IV Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Immunology • Types of immunity : Innate and Acquired immunity, Active & Passive. Immune System – • Lymphoid organs – primary and secondary. • Cells of immune system –Lymphocytes, Monocytes, Macrophages, Neutrophils, Basophils, Eosinophils, NK Cells and Null Cells.	28.03.2022 to 07.04.2022	4 Hrs 3 Hrs 3 Hrs 4 Hrs	-	-
Unit V Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Immunoglobulin – Structure and Functions. • Antigen –Antibody Reaction . Cell mediated and humoral mediated immunity • Immune responses- Primary & Secondary . • Complement factors – Hypersensitivity.	11.04.2022 to 28.04.2022	3 Hrs 3 Hrs 4Hrs 4Hrs	-	-

D. <u>ACTIVITIES:</u>

Activities Name	Details
Test	Unit Test Date: 25.02.2022, 28.02.2022,18.03.2022
Assignment	24.02.2022, 28.02.2022
Quiz	01.03.2022,21.03.2022
Seminar	08.03.2022,10.03.2022,14.03.2022,21.03.2022
Tutor Ward Meeting	Monthly Once

PRINCIPAL



TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty	**:**	**Dr. T. SUMATHI**
Department	**:**	**Zoology**
Programme	**:**	**M .Sc**
Programme Code	**:**	**PSZ**
Name of the Paper	**:**	**Biochemistry, Bio physics and Bio techniques**
Lecture Hours	**:**	**90 Hrs**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To understand the chemical nature of life and life process • To provide an idea on structure and functioning of bio molecules • To generate an interest in the subject and help students explore the new developments in biochemistry • To learn the biophysical properties and functioning of life process • To introduce the tools and techniques available for studying biochemical and	• Understand the chemical nature of life and life process • Understand the structure of bio-molecules and its function in life. • Learn the biophysical properties and functioning of life processes. • Learn the advanced tools and techniques available for studying biochemical and biophysical nature of life. • Job offer: Instrumentation and Lab technician, Research Assistant in	• Power Point • e– Module • Chalk & Talk Method • Lecture Method • Discussion Method • Study Assignment Method, • Problem Solving Method • Seminar Method • Demonstration Method

biophysical nature of life • To equip the learner to use the tools and techniques for project work/ research in biology	Clinical Laboratory, Technician/Research Assistant in TIFR, CCMB, ICFRE, ICMRE, ICAR, AIMS Research Institute. Institut	

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Classification of carbohydrates, proteins and lipids. • Composition, structure and function of biomolecules, Mechanism of enzyme action • Regulation of enzymatic activity , Fat- Soluble and water soluble • Vitamins. Principles of catalysis, enzymes and enzyme kinetics, Metabolism of amino acids nucleotides and vitamins	24.02.2022 to 04.03.2022	2 Hrs 4Hrs 4 Hrs 4 Hrs	-	-
Unit II Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Electromagnetic radiation – Uses of X-rays. UV rays and radio waves • Spectrophotometry – Laws and application of thermodynamics. Radioactivity • Natural and artificial –	05.03.2022 to 14.03.2022	3 Hrs 4 Hrs 3Hrs	-	-

	half life – Measurement of Radioactivity. • GeigerMuller counter and Scintillation counter – Principles and applications.		4 Hrs		
Unit III Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Microscopy – Magnification • Phase contrast and Electron microscopes Camera lucida, • Micrometry – Principle and their applications. • Microtomy – types of microtomes – fixation	15.03.2022 to 28.03.2022	3 Hrs 3 Hrs 4Hrs 4Hrs	-	-
Unit IV Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• pH– buffers – acid base balance –– Centrifugation – types of centrifuges • Clinical, High speed and Ultra Centrifuges. • Principle and applications of colorimetry . • Spectrophotometry. spectroscopy, ESR spectroscopy, Mass spectroscopy.	29.03.2022 to 11.04.2022	4 Hrs 4 Hrs 3 Hrs 3Hrs	-	-
Unit V Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Chromatography – paper, thin layer, column, gas and liquid chromatograpy • Principles and application. Electrophoresis • Paper, gel (horizontal &	12.04.2022 to 29.04.2022	3 Hrs 4Hrs 3Hrs	-	-

	vertical) , Agarose gel and SDS – PAGE • Immuno electrophoresis – moled if: Principles and applications.		4Hrs		

D. <u>ACTIVITIES:</u>

Activities Name	Details
Test	Unit Test Date: 21.02.2022, 26.02.2022,18.03.2022
Assignment	10.03.2022, 22.03.2022
Quiz	01.03.2022,16.03.2022
Seminar	23.02.2022,28.02.2022,02.03.2022,22.03.2022
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : Dr. T. SUMATHI

Department : Zoology

Programme : B.Sc

Programme Code : USZ

Name of the Paper : Biophysics, Biochemistry and Biostatistics

Lecture Hours : 90 Hrs (5 UNITS)

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To study the basics of Biophysics and its role. • To obtain the importance of bio-molecules and metabolic process. • To know the basic concept of Biostatistics and application in the Bioscience. • To understand the metabolic pathways. • Ability to analyze the biological data.	• Develop a thorough grounding in fundamental analytical approaches for quantitative study of living systems and life processes. • To determine the physical phenomena which influence living organisms and some of their basic applications in science and society • Understand the structure and function of macromolecules. • Identify the metabolic pathways of macromolecules • Know to analyze the biological data and document preparation.	• Power Point • e– Module • Chalk & Talk Method • Lecture Method • Discussion Method • Study Assignment Method, • Problem Solving Method • Seminar Method • Demonstration Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Biophysics • Principles and Components of Colorimeter and • Spectrophotometer. Colloids – Definition • Types Properties: Electro kinetic	21.02.2022 to 28.02.2022	3 Hrs 3 Hrs 4Hrs 4Hrs		
Unit II Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Energy sources – Principle and Application of Thermodynamic laws • Free energy; Natural radiation • Theories and Properties of Natural light – Effect of UV light and lionizing radiation • Detection – Disintegration.	01.03.2022 to 12.03.2022	4 Hrs 3 Hrs 3Hrs 4 Hrs		
Unit III Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Biochemistry • Classification -Structure and functions of Proteins • Carbohydrates – Lipids. Enzymes – Classification • Mechanism of action – Kinetics – Co enzymes	14.03.2022 to 25.03.2022	3 Hrs 3 Hrs 4Hrs 4Hrs	-	-
Unit IV Total 18 Hrs Test-1 Hr	• Metabolism: Protein – Deamination – Transamination	28.03.2022 to 07.04.2022	4 Hrs	-	-

Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Carbohytrate – Glycogenesis – Glycogenolysis – Glycolysis • Citric and cycle – Oxidative Phosphorylation • Lipids –Oxidation		3 Hrs 3Hrs 4 Hrs		
Unit V Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Biostatistics • Types of data – Collection of data – diagrammatic and • Graphical representation of data. Mean Median, Mode and • Standard Deviation. Co-Efficient of Variation	11.04.2022 to 28.04.2022	3 Hrs 4Hrs 3 Hrs 3 Hrs	-	-

D. <u>ACTIVITIES:</u>

Activities Name	Details
Test	Unit Test Date: 25.02.2022, 28.02.2022,18.03.2022
Assignment	24.02.2022, 28.02.2022
Quiz	01.03.2022,21.03.2022
Seminar	08.03.2022,10.03.2022,14.03.2022,21.03.2022
Tutor Ward Meeting	Monthly Once

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TEACHING PLAN

A. GENERAL INFORMATION

Name of the Faculty : **Dr. T. SUMATHI**

Department : **Zoology**

Programme : **B.Sc**

Programme Code : **USZ**

Name of the Paper : **COMMERCIAL ZOOLOGY**

Lecture Hours : **75 Hrs(5 UNITS)**

B. ABOUT THE COURSE:

Course Objectives	Course Outcomes	Teaching Methodology
• To bring about awareness to the various branch of Zoology available to get self employment opportunity • To generate employments. • To motivate to become entrepreneurs. • Skill to develop apiculture in their own house. • Ability to produce vermicompost.	• Learn the courses with excitement of biology along with the self employment opportunity in vermiculture. • Students interested in entrepreneurship and start some small business based on their interest and experience on apiculture. • Ability to impart complex technical knowledge relating to economic importance of Lac and sericulture. • Work precisely in aquaculture field by learning culture practice and construction, management of pond. • Familiar with poultry farming to generate employment opportunity	• Power Point • e– Module • Chalk & Talk Method • Lecture Method • Discussion Method • Study Assignment Method, • Problem Solving Method • Seminar Method • Demonstration Method

C. PLAN OF THE WORK:

Unit / Modules	Topic to be covered	Proposed date	Lecture Hrs	Practical Hrs	Remarks
Unit I Total 18 Hrs Test-1 Hr Assignment-1Hr Seminar-1 Hr Quiz-1 Hr	• Vermiculture : Common species – Eigenia • Endrilues and Perionix excavates. Biology of Earthworm • Vermicomposting – Required conditions- Methods (Pit &Heap) • Advantages - Economic importance.	21.02.2022 to 28.02.2022	3 Hrs 3Hrs 2Hrs 3Hrs		
Unit II Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Apiculture – Species of Honey Bee, Types of Honey Bee • Newton's Bee hive – Care and Management • Honey extraction and Honey Extracting Equipments • Honey Extractor, Smoker, Queen excluder, Drone excluder, Bee	01.03.2022 to 12.03.2022	3 Hrs 3 Hrs 3 Hrs 2Hrs		
Unit III Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Lac Culture • Life cycle of Lac insect – Economic • Importance of Lac. Sericulture: Life cycle of Bombyxmori	14.03.2022 to 25.03.2022	3 Hrs 3 Hrs 2 Hrs	-	-

	• Economic of Silk		3Hrs		
Unit IV Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Aquaculture – Construction and Management of Pond. • Culture practices of Common carp. • Shrimp Culture– Penaeusmonodon-Pearl culture.	28.03.2022 to 07.04.2022	4Hrs 3Hrs 4Hrs	-	-
Unit V Total 18 Hrs Test-1 Hr Assignment-1 Hr Seminar-1 Hr Quiz-1 Hr	• Poultry farming – Types of Poultry • Care and Management – Poultry Nutrition • Diseases and their management – Composition and Nutritive value of egg • Economics of Poultry production	11.04.2022 to 28.04.2022	3 Hrs 2 Hrs 3 Hrs 3 Hrs	-	-

D. <u>ACTIVITIES:</u>

Activities Name	Details
Test	Unit Test Date: 25.02.2022, 28.02.2022,18.03.2022
Assignment	24.02.2022, 28.02.2022
Quiz	01.03.2022,21.03.2022
Seminar	08.03.2022,10.03.2022,14.03.2022,21.03.2022
Tutor Ward Meeting	Monthly Once

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