



|| JAI SRI GURUDEV ||
SRI ADICHUNCHANAGIRI FIRST GRADE COLLEGE, C R PATANA-573116.

Department of Zoology

LESSON PLAN FOR THE ACADEMIC YEAR 2023-24(NEP)

(Annexure-1.2) Criterion 01 (Metric- 1.1.1)

Paper name: Cytology, Genetics and Infectious diseases

Programme : B.Sc. Hons

Class : I SEM (DSC)

Name of the faculty : KMR

Duration : September to December

Total Hours: 28 hours

Sl.No.	Topics Covered	No. of Lecture Hours	Methodology/ pedagogy	Time period
01.	<p>Chapter 1. Structure and Function of Cell Organelles I in Animal cell. Plasma membrane: chemical structure-lipids and proteins. Endomembrane system: protein targeting and sorting, transport, endocytosis and exocytosis.</p> <p>Chapter 2. Structure and Function of Cell Organelles II in Animal Cell. Cytoskeleton: microtubules, microfilaments, intermediate filaments. Mitochondria: Structure, oxidative phosphorylation; electron transport system. Peroxisome and Ribosome: structure and function.</p>	14	Lectures/Video s / Seminars/Project/ Group discussion/ Assignment	01/09/2023 to 30/10/2023
02.	<p>Chapter 3. Nucleus and Chromatin Structure - Structure and function of nucleus in eukaryotes, Chemical structure and base composition of DNA and RNA, DNA supercoiling, chromatin organization, structure of chromosomes, Types of DNA and RNA.</p> <p>Chapter 4. Cell cycle, Cell Division and Cell Signaling -Cell division: mitosis and meiosis, Introduction to Cell cycle and its regulation, apoptosis , Signal transduction: intracellular II signaling and cell surface receptors, via G-protein linked receptors, Cell-cell interaction: cell adhesion molecules, cellular junctions</p>	14	Lectures/Video s / Seminars/Project/ Group discussion/ Assignment	01/11/2023 to 10/12/2023
03.	Revision			25/12/2023



List of labs to be conducted	56 Hrs.
1. Understanding of simple and compound microscopes. 2. To study different cell types such as buccal epithelial cells, neurons, striated muscle cells using 3. Methylene blue/any suitable stain (virtual/ slaughtered tissue). 3. To study the different stages of Mitosis in root tip of Allium cepa. 4. To study the different stages of Meiosis in grasshopper testis (virtual). 5. To check the permeability of cells using salt solution of different concentrations. 6. Study of parasites in humans (e.g. Protozoans, Helminthes in compliance with examples being studied in theory) permanent microslides. 7. To learn the procedures of preparation of temporary and permanent stained slides, with available mounting material. 8. Study of mutant phenotypes of Drosophila sp. (from Cultures or Photographs). 9. Preparation of polytene chromosomes (Chironomus larva or Drosophila larva). 10. Preparation of human karyotype and study the chromosomal structural and numerical aberrations from the pictures provided. (Virtual/optional). 11. To prepare family pedigrees 12. Revision	2 nd week of Sep 3 rd week of Sep 4 th week of Sep to 2 st week of Oct 3 rd week of Oct 4 th week of Oct 1 st week of Nov 2 nd week of Nov to 4 th week of Nov 1 st week of Dec 2 nd to 3 rd week of Dec



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LESSON PLAN FOR THE ACADEMIC YEAR 2023-24

(Annexure-1.2) Criterion 01 (Metric- 1.1.1)

Paper name: Molecular Biology, Bioinstrumentation & Techniques in Biology

Programme : B.Sc. Hons (NEP)

Class : III SEM (DSC)

Name of the faculty : KMR

Total Hours: 28 hours

Duration : September to December

Sl. No	Particulars	No. of Lecture Hours	Methodology/pedagogy	Time period
01.	Chapter 1: Process of Replication and Transcription <ul style="list-style-type: none"> • Fine structure of gene (Cistron, Recon, Muton) • DNA polymerase types and function. • Semiconservative model of replication. • Replication in Prokaryotes (Initiation, Elongation, Termination) • RNA polymerases - types and functions • Transcription in prokaryotes and eukaryotes 	08	Lectures/Videos / Seminars/ Group discussion/ Assignment	01/09/2023 to 30/09/2023
02.	Chapter 2: Process of Translation <ul style="list-style-type: none"> • Genetic code and its salient features • Translation in prokaryotes and eukaryotes 	06	Lectures/Videos / Seminars/ Group discussion/ Assignment	01/10/2023 to 22/10/2023
03.	Chapter 3. Regulation of gene expression-I <ul style="list-style-type: none"> • Regulation of gene expression in prokaryotes- lac operon (inducible) and trp operon (repressible) in E. coli Regulation of gene expression in eukaryotes - Role of chromatin (euchromatin and heterochromatin) in gene expression Post-transcriptional modification: capping, splicing, polyadenylation• Concept of RNA editing (mRNA), gene silencing, and, RNA 	08	Lectures/Videos / Seminars/ Group discussion/ Assignment	23/10/2023 to 20/11/2023
04.	Chapter 4. Regulation of gene expression-II Post-translational modifications: purpose, advantages, and significance; glycosylation,• methylation, phosphorylation, and acetylation. Intracellular protein	06	Lectures/Videos / Seminars/Group discussion/	22/11/2023 to 10/12/2023



	degradation (lysosomal autophagy and ubiquitin proteasome pathway).		Assignment	
09.	Revision		06/12/2023 to 14/12/2023	

List of labs to be conducted	56 Hrs.	
1. To study the principle and applications of simple, compound and binocular I microscopes.		2 nd week of Sep
2. To study the principle and applications of various lab equipments- pH 2 meter, Electronic balance, Vortex mixer, use of glass pipette and micropipettes, Laminar air flow, Incubator, shaker, Water bath and centrifuge.		3 rd week of Sep to 1 st week of Oct
3. To prepare Buffer solutions (Phosphate, Citrate, Tris-HCl buffer)		1 nd week of Oct
4. To estimate amount of RNA by Orcinol method.		2 nd week of Oct to 3 rd week of Oct
5. Demonstration of differential centrifugation to fractionate components in a given mixture.		4 th week of Oct
6. To estimate amount of protein by Lowry's method.		1 st and 2 nd week of Nov
7. To identify different unknown amino acids using ascending paper chromatography.		3 rd week of Nov
8. Extraction of DNA from the given animal tissue sample.		4 th week of Nov
9. To estimate amount of DNA by di-phenyl amine (DPA) method.		1 st week of Dec
10 Revision		2 nd week of Dec



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LESSON PLAN FOR THE ACADEMIC YEAR 2023-24

(Annexure-1.2) Criterion 01 (Metric- 1.1.1)

Paper name: Chordates and Comparative Anatomy (Theory)

Programme : B.Sc. (NEP)

Class : V SEM

Name of the faculty : KMR

Duration : September to December

Total Hours: 60 hours

Sl. No	Particulars	No. of Lecture Hours	Methodology /pedagogy	Time period
01.	<p>Unit-1 Chapter1: Chordates: General characters of each class of chordate with suitable examples. Origin of Chordates. Basic characters of chordates and classification up to classes.</p> <p>Chapter2: Hemichordata: Type Study of <i>Balanoglossus</i>—Habit and Habitat, Morphology, Coelom. Tornaria larva and its affinities. Affinities and systematic position of Hemichordata.</p> <p>Chapter3:Urochordata: Type Study of <i>Herdmania</i>-Habit and Habitat, Morphology, Ascidian Tadpole-structure and its retrogressive metamorphosis.</p> <p>Chapter4:Cephalochordata : Type Study of <i>Branchiostoma (Amphioxus)</i>-Habit and Habitat, Morphology, Digestive system, Feeding mechanism, excretory and circulatory system.</p> <p>Chapter5: Agnatha General characters of Agnatha and classification up to classes. Salient features of Cyclostomata and Ostracodermi with orders And examples.</p> <ul style="list-style-type: none"> • Ammocoete larva and its significance. 	15	Lectures/Videos / Seminars/ Group discussion/ Assignment	01/09/2023 to 25/09/2023



02.	<p>Unit-II</p> <p>Chapter 6: Vertebrates: General characters and Classification of different classes of vertebrates (Pisces, Amphibia, Reptilia, Aves, Mammalia) upto the order with five characters for each order citing examples. General characters of Chondrichthyes and Osteichthyes. Interesting features and evolutionary significance of Dipnoi. Salient features of Placental with examples. Interesting features of <i>Sphenodon</i>, crocodile and <i>Archaeopteryx</i>. Salient features of Ratitae and Carinatae with examples. Interesting features of mammalian orders (Insectivora, Carnivora, Chiroptera, Cetacea, Proboscidea, Ungulata Perissodactyla and Artiodactyla, and Primates - Platyrrhini and Catarrhini) with examples.</p>	15	Lectures/Videos / Seminars/ Group discussion/ Assignment	26/09/2023 to 20/10/2023
03.	<p>Unit-III</p> <p>Chapter 7. General account of Chordates: Types of caudal fins, scales and swim bladder in fishes. Origin of Amphibia. Neoteny and Paedogenesis. Adaptive radiation in extinct reptiles with suitable examples. Temporal fossae in reptiles. Poison apparatus and biting mechanism in snakes. Parental care in Pisces and Amphibians. Flight adaptations in birds. • Dentition in mammals. Evolution of molar tooth. Migration in Pisces, Birds and Mammals.</p>	15	Lectures/Videos / Seminars/ Group discussion/ Assignment	21/10/2023 to 15/11/2023
04.	<p>Unit-IV</p> <p>Comparative Anatomy of Vertebrates:</p> <p>Chapter 8. Integumentary System: Structure of skin and its derivatives.</p> <p>Chapter 9. Skeletal System</p> <ul style="list-style-type: none"> • Comparative account of Axial Skeletal system in vertebrates; Skull- Amphibian (Frog), Reptiles (Lizard), Aves (Pigeon) and Mammals (Man). • Comparative account of Appendicular skeletal system in vertebrates- Pectoral and Pelvic girdles of Amphibian (Frog), Reptiles (Lizard), Aves (Pigeon) and Mammals (Man). <p>Chapter-7 Respiratory system</p> <ul style="list-style-type: none"> • Comparative account of respiratory system in 	15	Lectures/Videos / Seminars/ Group discussion/ Assignment	16/11/2023 to 05/12/2023



	<p>vertebrates: Pisces (Scoliodon), Amphibian (Frog), Reptiles (Lizard), Aves (Pigeon) and Mammals (Man).</p> <p>Chapter-8 Circulatory System</p> <ul style="list-style-type: none"> Comparative account of heart and aortic arches in vertebrates: Pisces (Scoliodon), Amphibian (Frog), Reptiles (Lizard), Aves (Pigeon) and Mammals (Man). <p>Chapter-9 Excretory System</p> <ul style="list-style-type: none"> Succession of kidney in vertebrates. <p>Chapter-9 Nervous system Comparative account of brain in vertebrates: Pisces (Scoliodon), Amphibian (Frog), Reptiles (Lizard), Aves (Pigeon) and Mammals (Man).</p>			
05.	Revision		06/12/2023 to 14/12/2023	



List of labs to be conducted	60 Hrs.	
1. Protochordata: Balanoglossus and its T. S. through proboscis Ascidian/ <i>Herdmania</i> and <i>Amphioxus</i> , T.S. of <i>Amphioxus</i> through pharynx and intestine.		2 nd week of Sep 3 rd week of Sep
2. Cyclostomata: - <i>Petromyzon</i> , Ammocoete larva and <i>Myxine</i> .		3 rd week of Sep
3. Pisces: 4. Cartilaginous Fishes - <i>Narcine</i> , <i>Trygon</i> , <i>Pristis</i> , <i>Mylobatias</i> 5. Bony Fishes - Zebrafish, Hippocampus, Muraena, Ostracion, Tetradon, Pleuronectus.		4 th week of Sep
6. Ornamental fishes: -Siamese, Koi, Oscar, Betta Sp., Neon tetra, Guppies, Goldfish, Angle fish, Rainbow fish, Mollies (Locally available any five aquarium fishes).		4 th week of Sep
7. Accessory respiratory organs - <i>Sacco branchus</i> , <i>Clarias</i> and <i>Anabas Diodon</i> , <i>Echineis</i> (Any four)		1 st week of Oct
8. Amphibia: <i>Rana</i> , <i>Bufo</i> , <i>Ambystoma</i> , <i>Axolotllarva</i> , <i>Necturus</i> and <i>Ichthyophis</i> .		2 nd week of Oct
10. Reptilia: -Turtle, Tortoise, <i>Mabuya</i> , <i>Calotes</i> , Chameleon, <i>Varanus</i> , snakes - <i>Dryophis</i> , Rat snake, Brahmini, Cobra, Krait, Russell's viper and <i>Hydrophis</i> ;		3 rd and 4 th week of Oct
11. Aves: Beak and feet modifications in the following examples: Duck, Crow, Sparrow, Parrot, Kingfisher, Eagle or Hawk. (Any four)		1 st week of Nov
12. Mammalia: Mongoose, Squirrel, Pangolin, Hedge Hog, Rat and Loris. (Any four)		1 st week of Nov
13. Virtual Dissection/Cultured specimens: Shark/Bony fish: Afferent and efferent branchial systems, glosso-pharyngeal and vagus nerves.		2 nd week of Nov 3 rd week of Nov 4 th week of Nov
14. Virtual Dissection/Cultured specimens: Rat: Dissection (only demonstration) - Circulatory system (arterial and venous), Urinogenital system.		1 st week of Dec
14- 16. Skeletal System in Shark/ Frog/ Pigeon/ Rabbit: Skull, vertebrae, girdles and limb bones (Except hands and feet)		2 nd week of Dec
16. Revision		

Signature

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Signature M.K.
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(Annexure-1.2) Criterion 01 (Metric- 1.1.1)

Paper name: Cytology, Genetics and Infectious diseases

Programme : B.Sc. Hons

Class : I SEM (DSC)

Total Hours: 28 hours

Name of the faculty : MN

Duration : September to December

Sl.No.	Topics Covered	No. of Lecture Hours	Methodology/ pedagogy	Time period
01.	<p>Chapter 5. Mendelism and Sex Determination Basic principles of heredity: Mendel's laws- monohybrid cross and hybrid cross, Complete and Incomplete Dominance, Penetrance and expressivity, Genetic Sex-Determining Systems, Environmental Sex Determination, Sex Determination and mechanism in <i>Drosophilamelanogaster</i>. Sex-linked characteristics in humans and dosage compensation.</p> <p>Chapter 6. Extensions of Mendelism, Genes and Environment Extensions of Mendelism: Multiple Alleles, Gene Interaction. The Interaction Between Sex and Heredity: Sex-Influenced and Sex-Limited. Characteristics Cytoplasmic Inheritance, Genetic Maternal Effects. Interaction between Genes and Environment: Environmental Effects on Gene Expression, Inheritance of Continuous Characteristics.</p>	14	Lectures/Videos / Seminars/Project/ Group discussion/ Assignment	01/09/2023 to 30/10/2023



02.	<p>Chapter 7. Human Chromosomes and Patterns of Inheritance Patterns of inheritance: autosomal dominance, autosomal recessive, X-linked recessive, X-linked dominant. Chromosomal anomalies: Structural and numerical aberrations with examples. Human karyotyping and Pedigree analysis.</p> <p>Chapter 8. Infectious Diseases Introduction to pathogenic organisms: viruses, bacteria, fungi, protozoa and worms. Structure, life cycle, pathogenicity, including diseases, causes, symptoms and control of common parasites: Trypanosoma, Giardia and Wuchereria.</p>	14	Lectures/Videos / Seminars/Project/ Group discussion/ Assignment	01/11/2023 to 10/12/2023
03.	Revision	25/12/2023		
List of labs to be conducted		56 Hrs.		
<ol style="list-style-type: none"> 1. Understanding of simple and compound microscopes. 2. To study different cell types such as buccal epithelial cells, neurons, striated muscle cells using 3. Methylene blue/any suitable stain (virtual/ slaughtered tissue). 3. To study the different stages of Mitosis in root tip of Allium cepa. 4. To study the different stages of Meiosis in grasshopper testis (virtual). 5. To check the permeability of cells using salt solution of different concentrations. 6. Study of parasites in humans (e.g. Protozoans, Helminthes in compliance with examples being studied in theory) permanent microslides. 7. To learn the procedures of preparation of temporary and permanent stained slides, with available mounting material. 8. Study of mutant phenotypes of Drosophila sp. (from Cultures or Photographs). 9. Preparation of polytene chromosomes (Chironomus larva or Drosophila larva). 10. Preparation of human karyotype and study the chromosomal structural and numerical aberrations from the pictures provided. (Virtual/optional). 11. To prepare family pedigrees 12. Revision 				<p>2nd week of Sep 3rd week of Sep 4th week of Sep to 2st week of Oct 3rd week of Oct 4th week of Oct 1st week of Nov 2nd week of Nov to 4th week of Nov 1st week of Dec 2nd to 3rd week of Dec</p>



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(Annexure-1.2) Criterion 01 (Metric- 1.1.1)

Paper name: Molecular Biology, Bioinstrumentation & Techniques in Biology

Programme : B.Sc. Hons (NEP)

Class : III SEM (DSC)

Total Hours: 28 hours

Name of the faculty : MN

Duration : September to December

Sl. No	Particulars	No. of Lecture Hours	Methodology /pedagogy	Time period
01.	Chapter 5: Microscopy Principles and applications of Light microscopy, Dark field microscopy, Phase contrast microscopy, Fluorescence microscopy, Confocal microscopy and Electron microscopy (SEM and TEM).	09	Lectures/Videos / Seminars/Group discussion/ Assignment	01/09/2023 to 30/09/2023
02.	Chapter 6: Centrifugation and Chromatography Centrifugation: Principles, types, and applications (High speed and Ultracentrifugation) Chromatography : Principle and applications of: TLC, HPLC and GC	05	Lectures/Videos / Seminars/Group discussion/ Assignment	01/10/2023 to 22/10/2023
03.	Chapter 7: Biochemical Instrumentation Colorimetry and Spectrophotometry: Beer-Lambert's law, Absorption spectrum, UV-VL Spectrophotometer. pH meter, measurement of pH Principle, applications and safety measures of Radio-tracer techniques - Autoradiography	06	Lectures/Videos / Seminars/Group discussion/ Assignment	23/10/2023 to 15/11/2023
04.	Chapter 8: Molecular Techniques Principle and applications of Agarose gel-electrophoresis, SDS-PAGE, DNA Sequencing (Sanger's Dideoxy method), PCR, DNA Fingerprinting, ELISA, Southern & Northern Blotting and Western Blotting	08	Lectures/Videos / Seminars/ Group discussion/ Assignment	16/11/2023 to 05/12/2023
05.	Revision			06/12/2023 to 14/12/2023



List of labs to be conducted	56 Hrs.
1. To study the principle and applications of simple, compound and binocular I microscopes.	2 nd week of Sep
2. To study the principle and applications of various lab equipments- pH 2 meter, Electronic balance, Vortex mixer, use of glass pipette and micropipettes, Laminar air flow, Incubator, shaker, Water bath and centrifuge.	3 rd week of Sep to 1 st week of Oct
3. To prepare Buffer solutions (Phosphate, Citrate, Tris-HCl buffer)	1 nd week of Oct
4. To estimate amount of RNA by Orcinol method.	2 nd week of Oct to
5. Demonstration of differential centrifugation to fractionate components in a given mixture.	3 rd week of Oct 4 th week of Oct
6. To estimate amount of protein by Lowry's method.	1 st and 2 nd week
7. To identify different unknown amino acids using ascending paper chromatography.	of Nov
8. Extraction of DNA from the given animal tissue sample.	3 rd week of Nov
9. To estimate amount of DNA by di-phenyl amine (DPA) method.	4 th week of Nov
10 Revision	1 st week of Dec 2 nd week of Dec



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LESSION PLAN FOR THE ACADEMIC YEAR 2023-24

(Annexure-1.2) Criterion 01 (Metric- 1.1.1)

Paper name: Non-Chordates and Economic Zoology (Theory)

Programme : B.Sc. (NEP)

Class : V SEM

Total Hours: 60 hours

Name of the faculty : MN

Duration : September to December

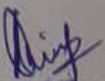
Sl. No	Particulars	No. of Lecture Hours	Methodology /pedagogy	Time period
01.	Unit-1 General characters, classification up to classes with suitable examples to all phyla 1. Protozoa to Coelenterate <ul style="list-style-type: none"> • Protozoa-<i>Paramecium</i>(Morphology and Reproduction) • Porifera-<i>Sycon</i> (Canal System) • Coelenterata – <i>Obelia</i> (Morphology and Reproduction) 2. Ctenophora to Nematheiminthes <ul style="list-style-type: none"> • Ctenophora –Salient feature • Platyhelminthes - <i>Taenia</i> (Tapeworm)(Morphology and Reproduction) • Nematelminthes - <i>Ascaris lumbricoides</i> (Morphology and Reproduction) 	15	Lectures/Videos / Seminars/ Group discussion/ Assignment	01/09/2023 to 25/09/2023
02.	Unit-II 3. Annelida <ul style="list-style-type: none"> • Annelida-<i>Hirudinaria</i>(Leech)(Morphology and Reproduction) 4. Arthropoda <ul style="list-style-type: none"> • Arthropoda-<i>Palaemon</i> (Prawn) Morphology, Appendages, Nervous System and Reproduction) 	15	Lectures/Videos / Seminars/ Group discussion/ Assignment	26/09/2023 to 20/10/2023
03.	Unit-III 5. Mollusca to Hemichordata <ul style="list-style-type: none"> • Mollusca-<i>Pila</i> (Morphology, Shell, Respiration, Nervous System and Reproduction) • Echinodermata-<i>Pentoceros</i> (Morphology and 	15	Lectures/Videos / Seminars/ Group discussion/ Assignment	21/10/2023 to 15/11/2023

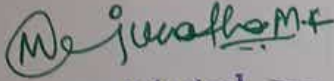


	Water Vascular System)			
04.	Unit-IV 6.Economic Zoology: Vectors and Pests Life cycle and their control of following pests: Gundhi Bug, Sugarcane leafhopper, Rodents, Termites and Mosquitoes and their control 7.Economic Zoology: Lac-culture, Vermiculture and Poultry	15	Lectures/Videos / Seminars/Group discussion/ Assignment	16/11/2023 to 05/12/2023
05.	Revision			06/12/2023 to 14/12/2023



List of labs to be conducted	60 Hrs.	
1. Preparation and observation of protozoan culture. 2. Protozoa: Systematics of <i>Amoeba</i> , <i>Euglena</i> , <i>Noctiluca</i> , <i>Paramecium</i> and <i>Vorticella</i> (Permanent slides).		2 nd week of Sep 3 rd week of Sep
3. Porifera: Systematics of <i>Sycon</i> , <i>Euplectella</i> , <i>Hyalonema</i> , <i>Spongilla</i> and <i>Euspongia</i> (Specimens). Study of permanent slides of T.S of <i>Sycon</i> , spicules and gemmules.		3 rd week of Sep
4. Cnidaria: Systematics of <i>Aurelia</i> and <i>Metridium</i> (Specimens). Slides of <i>Hydra</i> , <i>Obelia</i> -polyp and medusa, and <i>Ephyra</i> larva, T.S. of <i>Metridium</i> passing through mesenteries.		4 th week of Sep
5. Study of Corals - <i>Astraea</i> , <i>Fungia</i> , <i>Meandrina</i> , <i>Corallium</i> , <i>Gorgonia</i> , <i>Millepora</i> and <i>Pennatula</i> .		4 th week of Sep
6. Helminthes: Systematics of <i>Planaria</i> , <i>Fasciola hepatica</i> and <i>Taenia solium</i> , <i>Ascaris</i> -Male and female (Specimens). Slides of T.S. of <i>Planaria</i> , T.S of male and female <i>Ascaris</i> .		1 st week of Oct
7. Annelida: Systematics of <i>Nereis</i> , <i>Sabella</i> , <i>Aphrodite</i> and Leech (Specimens) Slide of T.S. of Earthworm through typhlosole.		2 nd week of Oct
8. Arthropoda: Systematics of <i>Panaeus</i> , <i>Palaemon</i> , <i>Astracus</i> , Scorpion, Spider, <i>Limulus</i> , <i>Peripatus</i> , Millipede, Centipede, Prayingmantis, Termite Queen, Moth, Butterfly, Dung beetle / Rhinoceros beetle (Any six specimens). Slide of Larvae-Nauplius, Zoa and Mysis.		3 rd and 4 th week of Oct
9. Mollusca: Systematics of <i>Chiton</i> , <i>Mytilus</i> , <i>Aplysia</i> , <i>Pila</i> , <i>Octopus</i> , <i>Sepia</i> (Specimens) and Glochidium larva (Slide).		1 st week of Nov
10. Shell Pattern - <i>Unio</i> , <i>Ostrea</i> , <i>Cyprina</i> , <i>Murex</i> , <i>Nautilus</i> , <i>Patella</i> , <i>Dentalium</i> , Cuttlebone. (Any four)		1 st week of Nov
11. Echinodermata: Systematics of Seastar, Brittlestar, Sea Urchin, Sea cucumber, Sealilly (Specimens). Slides of Bipinnaria larva, Echinopluteus larva and Pedicellaria.		2 nd week of Nov
12. Harmful Non chordates: Soil Nematodes. Agricultural, veterinary and human pests of Arachnida and Arthropoda.		3 rd week of Nov
13. Beneficial Non-chordates:		3 rd week of Nov
• Sericulture: Lifecycle of <i>Bombyx mori</i> , Uzifly, Cocoon, Rawsilk.		
• Apiculture: Any 2 Species of honeybee and bee wax.		4 th week of Nov
• Pearl Culture: Pearl Oyster and Natural Pearls.		
14. Virtual Dissection/Cultured specimens: Earthworm – Nervous system, Leech-Digestive System		1 st week of Dec
15. Virtual Dissection/Cultured specimens: Prawn-Nervous system. Cockroach-Salivary Apparatus and Digestive system.		2 nd week of Dec
16. Revision		


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