TEACHING PLAN
Academic Session 2023-2024
NEP Curriculum
Part-1: Semester 1(July-December)
CC – 1
CORE COURSE 1. Cell Biology

Major/Minor/MDC:CC1-TH	Teacher	ClassHour	Teaching Method
Unit 1: Plasma Membrane	DG	7	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 2: Cytoplasmic organclles I	SB	8	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 3: Cytoplasmic organclles II	SP	5	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 4: Cytoskeleton	GH	4	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 5: Nucleus	GH	5	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 6: Cell Cycle	SK	11	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 7: Cell Signalling	SK	5	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 8: Tools and Techniques in Cell Biology	DG	5	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Total Marks -75			

Cell Biology Lab; ZOOA-CC-1-P	Teacher	ClassHour	Teaching Method
Cell viability study by Trypan Blue Exclusion method.	SB	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Standardization of Ocular and Stage Micrometer and Measurement of cell or microscopic specimen such as *Paramoecium* sp.	SK	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Preparation of squamous epithelial cell with staining.	SK	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Isolation of Bone Marrow Cells from Rat/Mouse and Giemsa Staining.	SP	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -25			

Part-1: Semester 2
CORE COURSE 2: Biochemistry

Major/Minor/MDC:CC2-TH	Teacher	ClassHour	Teaching Method
Unit 1: Carbohydrates	SB	9	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 2: Proteins	GH	9	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 3: Lipids	GH	4	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 4: Enzymes	DG	9	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 5: Carbohydrates Metabolism	SK	7	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 6: Protein Metabolism	SP	4	Lecture method using books,

			powerpoint presentation, videos, group disscussion and class test
Unit 7: Lipid Metabolism	SK	4	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 8: Nucleic acid Metabolism	DG	3	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 7: Free radicals and Antioxidants	SP	1	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Total Marks -75			
Biochemistry Lab; CC-2-P	**Teacher**	**ClassHour**	**Teaching Method**
Group A			
Qualitative tests for carbohydrates, proteins and lipids 1. For carbohydrate (Glucose, Fructose, Maltose, Sucrose, Starch) – Molisch test, Barfoed test, Benedict test, Fehling test, Seliwanoff test, Hydrolysis test for sucrose, Iodine test 2. For Protein (Albumin, Gelatine, Peptone) – Biuret test, Million's test, Xanthoproteic test, Ninhydrin test 3. For lipid – Grease spot test	SP	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Group B			
Colorimetric estimation of the following a) Protein by Lowry's method	SB	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Colorimetric estimation of the following b) To study activity of amylase	SK	10	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -25			

Part 1: Semester 1

SEC-1: Applied Entomology

Major; SEC-1-TH	Teacher	ClassHour	Teaching Method
Unit 1: Basics of Entomology	SP	12	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 2: Medical Entomology	GH	14	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 3: Agricultural Entomology	DG	14	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 4: Sericulture	SB	5	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 5: Apiculture	SK	5	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Total Marks -75			
Applied Entomology Lab: SEC-1-P	**Teacher**	**ClassHour**	Teaching Method
Dissection and temporary mounting of: - Antennae and mouth parts of Cockroach, House fly and Mosquito	GH	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Methods of collection, preservation, and identification of economically important insects.	GH	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification of following insect pests (Order, family and specimen characters only): *Scirpophagaincertulus; Sitophilusoryzae*; *Callosobruchuschinensis, Leucinodesorbonalis*; *Anomissabulifera; Pyrillaperpusilla.*	DG	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Morphological studies of various castes of *Apis* sp	SK	20	Practical demonstration with hands on activity, powerpoint presentation and videos

Identification of life stages of *Bombyx mori*; Identification of Bivoltine and multivoltine mulberry cocoon.	SK	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification and medical significance of following insects (adults) through permanent slides/photographs: *Aedes* sp., *Culex* sp., *Anopheles* sp. [for mosquito, larvae and both sexes of adults], *Musca* sp., *Phlebotomus* sp., *Cimex* sp., *Pediculushumanuscapitis*., *Xenopsylla* sp.	SB	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Visits to **any one place of applied entomological significance** (submission ofa field report): **a**. Agricultural field/ forest for on spot study of pests and damage caused. **b**. Any Sericulture farm for studying grainage and rearing activities **c**. Visit to an apiary to study various activities o Apiculture **d**. Any rural or urban health centre to study various aspects of vector surveillance	SP, GH	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -25			

Part 1: Semester 2
SEC-2: Aquaculture

Major; SEC-2-TH	Teacher	ClassHour	Teaching Method
Unit 1: Basics of Idea of Fish Biology	SP	3	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 2: Sustainable Aquaculture System	SP	17	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 3: **Recent Advancement of Aquaculture**: Aquarium Fisheries. Preparation and Management of Fish Aquarium. Biology of Common Ornamental Fish: Guppy, Swordtail, Angel, Blue morph fish. Anemone fish, Butterfly fish, Molly.	SK	10	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 3: **Recent Advancement of Aquaculture**: Fish Nutritional Requirements: Capture Fishery: Fish Biotechnology:	DG	10	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 4: Fin Fish pathology	GH	5	Lecture method using books, powerpoint presentation, videos, group disscussion and

			class test
Unit 5: Applied Aquaculture	SB	5	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Total Marks -75			
Aquaculture Lab: SEC-2-P	**Teacher**	**ClassHour**	**Teaching Method**
Identification of different fish species using Meristic characters. (Systematic position, specimen characters) *Rohu, Catla, Cirhinus, Puntius, Amblyphyngodon, Channapunctatus, Lates, Mystus, Notopterus, Cyprinus, Hypopthalmichthys, Ctenopharyngodon, Oreochromisniloticus, Oreochromismossambicus Anabas, Clarias, Heteropneustis, Mugil, Macrobrachium, Paneus .*	SP	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Field visit to an Aquaculture farm/ Hatchery	GH	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -25			

Part 1: Semester 1
IDC-1: Animal Biology

IDC-1-TH	Teacher	ClassHour	Teaching Method
Unit 1: Animal Diversity	DG	10	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 2: Genetics	DG	12	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 3: Biodiversity and Wildlife	SP	15	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 4: Insect Vectors	SP	8	Lecture method using books, powerpoint presentation, videos, group disscussion and

			class test
Unit 5: Laboratory techniques and Instrumentation	DG	5	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Total Marks -75			
Animal Biology Lab; IDC-1-P	**Teacher**	**ClassHour**	**Teaching Method**
Karyotype analysis of Klinefelter, Down, Turner, Edward & Patau Syndrome	DG	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification (Phylum and specimen characters): *Amoeba, Paramoecium, Sycon, Neptune's Cup, Taenia, Ascaris, Nereis, Pheretima, Pila, Lamelledens, Penaeus, Macrobrachium, Musca, Anopheles, Culex, Asterias*.	DG	20	Practical demonstration with hands on activity, powerpoint presentation and videos
One Local-Outdoor Trip for Biodiversity Studies.	SP	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -25			

SEC G For MDC
Applied Zoology-Theory

SEC G For MDC	Teacher	Class Hour	Teaching Method
Unit 1: Agricultural Entomology	SP	6	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 2: Sericulture	SP	8	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 3: Apiculture	SK	7	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 4: Vermiculture	SP	7	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 5: Aquaculture	DG	8	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 6: Live Stock Management	DG	8	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Unit 7: Lac Culture	DG	6	Lecture method using books, powerpoint presentation, videos, group disscussion and class test
Total Marks -75			
SEC G For MDC **Applied Zoology-Practical**	**Teacher**	**Class Hour**	**Teaching Method**
Identification of various castes of Honey bee, life stages of *Bombyx mori*, various life stages of *Kerrialacca,* various earthworm species used in vermiculture and ectoparasites of Poultry birds	DG	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Identification of the following fish and prawn specimens (Specimen characters only): *Labeo rohita,Catla catla, Cirrhinus mrigela,*	DG	20	Practical demonstration with hands on activity, powerpoint

Cyprinus carpio, L. bata, Penaeus monodon, Macrobrachium rosenbergi			presentation and videos
Collection of any two pests and submission of specimen it along with a small report on its identifying features, life cycle, nature of damage and control: *Sitophilusoryzae, Triboliumcastaneum,Nilaparvatalugens, Anomissabulifera*and*Leucinodesorbonalis*	SP	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Visit to any one of the following and submission of report on the visit a) Apiary b) Freshwater fish farm c) Any agricultural field d) Poultry farm e) Sericulture farm f) Lac culture farm	SP	20	Practical demonstration with hands on activity, powerpoint presentation and videos
Total Marks -25			