# Shri Swami Vivekanand Shikshan Sanstha's Vivekanand College, Kolhapur (Empowered Autonomous) Department of Zoology

Academic year: 2023-24

# **Annual Teaching Report (Term II)**

- 1. Dr. G. K. Sontakke
- 2. Dr. T. C. Gaupale
- 3. Dr. S. P. Khairmode
- 4. Dr. S. S. Desai
- 5. Mr. G. H. Fadake
- 6. Dr. T. C. Patil
- 7. Ms. P. S. Shetfalkar
- 8. Ms. N. A. Jadhav
- 9. Ms. A. P. Sutar

10. Ms. P. R. Gaikwad



Dr. G. K. Sontakke

#### Shri Swami Vivekanand Shikshan Sanstha's

### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

### Annual teaching plan

Term II

Semester: VI

Teacher Name: -Dr. G. K. Sontakke

Subject: Aquatic Biology Course title: B.Sc. III

Mon	th: Decemb	er	Module unit	Sub unit planned
Lectures	Practical	Total	Unit-I	Freshwater Biology
4	4	12	Omt-1	1.Introduction of the aquatic biomes: Freshwater ecosystem (wetlands, streams and rivers)
Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		2.Origin and classification Ponds & lakes,
4	4	12	Unit-I	physicochemical characteristics: light, temperature stratification, dissolved solids, turbidity; dissolved gases (oxygen, carbon dioxide), nutrient cycling (nitrogen, phosphorus, sulphur, carbon)
Mon	th: Februa	ry	Module unit	Sub unit planned
Lectures	Practical	Total		3.Streams: Types of streams, physicochemical
4	4	12	Unit -I	environment, conservation of streams, adaptation of hill stream fishes
Month: March		Module unit	Sub unit planned	
Lectures	Practical	Total		4.Estuaries: Characteristics & types (based on
4	4	12	Unit-I	salinity) 5.Eutrophication

Dr. G. K. Sontakke

Dr. G. K. Sontakke

Shri Swami Vivekanand Shikshan Sanstha's

### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

#### Term II

Semester: IV

Subject: Cell Biology, Genetics, Evolution and Ethology (Section II)

Teacher Name: -Dr. G. K. Sontakke

Course title: B.Sc. II

Mor	nth: Januar	у	Module unit	Sub unit planned
Lectures	Practical	Total		Ethology
4	4	08	Unit- IV	Classification of Animal behavior,
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total	Unit -IV	Inborn and instinct behavior with suitable example,
4	4	08	Unit -1 V	
Month: March		Module unit	Sub unit planned	
Lectures	Practical	Total		Acquired animal behavior- imprinting,
4	4	08	Unit-IV	conditioning, habitual, reasoning
Mont	h- April- 20	024	Module Unit	Sub unit planned
Lectures	Practical	Total		Types of mimicry- protective and aggressive,
2	2	04	Unit-IV	Types of coloration- protective aggressive and warning, Social behavior in animals-honey bee and ant.

Dr. G. K. Sontakke

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Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

# Annual teaching plan

Term II

Semester: VI

Subject: Immunology-II

Name of the teacher: Dr. T. C. Gaupale

Course: B. Sc. III

Month-De	ecember-202	23	Module/Unit:	Sub-units planned
Lectures	Practicals	Total	basic concepts in immunolog	Overview of Immune system- Introduction to basic concepts in immunology, components of
4	4	08		immune system. Types of immunity
Month – .	January- 20	24		
Lectures	Practicals	Total	UNIT-I	Haematopoiesis, Cells in immune system- Lymphoid cells (B lymphocytes, T-
8	4	12		lymphocytes), natural killer cells (NK cells), phagocytes, granulocytic cells-neutrophils, eosinophils, basophils, mast cells. Organs of immune system- Primary lymphoid organ- bone marrow, thymus, bursa of fabricius.
Month- F	ebruary-202	4		
Lectures		Total	UNIT-I	Secondary lymphoid organ- lymph node, spleen, mucosal associated lymphoid tissue (MALT),
8	4	12		tonsils, gut associated lymphoid tissue (GALT) Antigens: Basic properties of antigens
Month- N	March-2024			
2	2	04	UNIT-II	Antibodies: Structure, classes and function of antibodies.

Dr. T. C. Gaupale

Dr. G. K. Sontakke

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#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

### Annual teaching plan

Term II

Semester: II

Subject: Genetics

Name of the teacher: Dr. T. C. Gaupale

Course: B. Sc. I

Month-D	ecember-202	23	Module/Unit:	Sub-units planned
Lectures	Practicals	Total	UNIT-I	Introduction to Genetics: Definition, scope and importance of genetics, Classical and modern
4	4	08		concept of gene (Cistron, Muton, Recon)
Month – .	January- 20	24		
Lectures	Practicals	Total	UNIT-I	Brief explanation of terms: Alleles, Wild type, Mutant allele, Locus, Dominant and
8	4	12		recessive trait, Homozygous and heterozygous, Genotype and phenotype, Genome, Mendelian Genetics: Mendel's law of inheritance
Month- F	ebruary-202	4		
Lectures	Practicals	Total	UNIT-I	Monohybrid cross, Dihybrid Cross, Test cross, Back cross. Extension of Mendelian Genetics:
8	4	12		Chromosomal theory of inheritance, Incomplete dominance and co-dominance, Multiple alleles with respect to ABO, RH blood group, Polygenic inheritance with reference to skin colour and eye colour in man, Lethal Alleles, Concept of Pleiotropy
Month- N	Aarch-2024			
2	2	04	UNIT-II	Mutations

Dr. T. C. Gaupale

Dr. G. K. Sontakke
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Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

# Annual teaching plan

Term II

Semester: VI

Subject: Immunology-II

Name of the teacher: Dr. Sneha S. Desai

Course: B. Sc. III

Month-D	ecember-202	23	Module/Unit:	Sub-units planned
Lectures	Practicals	Total	UNIT-I	Working of the Immune system Structure and functions of MHC
4	4	08	ell fallings (fer	Exogenous pathways of antigen presentation and processing
Month	January- 20	24	NATIONAL PROPERTY.	The same of the sa
Lectures	Practicals	Total	UNIT-I	Endogenous pathways of antigen presentation and processing, Basic
8	4	12		properties of signalling molecules- cytokines and their types (chemokines, interleukins
Month- F	ebruary-202	4		creaming the second sec
Lectures	Practicals	Total	UNIT-I	Interferons, lymphokines, tumour necrosis factor, Complement system: Components and
8	4	12		Classical pathways of complements system
Month- N	farch-2024			
2	2	04	UNIT-I	Alternative pathways of complements system

Dr. Sneha s. Desai

Dr. G. K. Sontakke
MEAD
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THOWARD AUTONOMOUS)

Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

#### Term II

Semester: II

Subject: Animal Diversity II

Name of the teacher: Dr. Shilpa P. Khairmode

Course: B. Sc. I

Month: March 2024			Module unit	Sub unit planned
Lectures	Practicals	Total	UNIT-II	Mammals: General Characters and classification up to subclasses
02	00	02	01111	
Month: April-2024		Module unit	Sub unit planned	
Lectures	Practicals	Total	UNIT- II	Mammals: Eutherian orders with examples, Primates, Chiroptera and Rodentia
02	00	02		

Dr. Shilpa P. Khairmode

Dr. G. K. Sontakke

Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

#### Term II

Semester: VI, Paper XV

Subject: Ecology and Toxicology

Name of the teacher: Dr. Shilpa P. Khairmode

Course: B. Sc. III

Month: N	larch 2024		Module unit	Sub unit planned
Lectures	Practicals	Total	UNIT-II	Toxicology: 3. Heavy metal toxicity- Mercury, Lead and
02	00	02	Cadmium	
Month: April-2024		Module unit	Sub unit planned	
Lectures	Practicals	Total	UNIT- II	Toxicology: 4. Classification of toxic agents- Natural, animal, plant, food and chemical toxins
02	00	02		

Dr. Shilpa P. Khairmode

Dr. G. K. Sontakke

Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

#### Term II

Semester: IV

Subject: Cell Biology, Genetics, Evolution and Ethology (Section I)

Name of the teacher: Mr. Ganesh H. Fadake

Course: B. Sc. II

Month - March - 2024			Module unit	Sub unit planned
Lectures	Practicals	Total	UNIT-I	Terminology in genetics, Principles of inheritance, Chromosomal theory of
03	00	03		inheritance, Incomplete dominance and codominance,
Month- A	pril-2024		Module unit	Sub unit planned
Lectures	Practicals	Total	UNIT- I	Multiple alleles with respect to ABO
01	00	01		

Mr. Ganesh H. Fadake

Dr. G. K. Sontakke

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#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

#### Term II

Semester: VI

Subject: Immunology-II

Name of the teacher: Dr. Tejashri C. Patil

Course: B. Sc. III

Month-D	ecember-202	23	Module/Unit:	Sub-units planned
Lectures	Practicals	Total	UNIT-II	Gell and Coombs classification of hypersensitivity
4	4	08		
Month -	January- 20	24		
Lectures	Practicals	Total	UNIT-II	Autoimmune disease- Organ-specific autoimmune diseases (insulin-dependent
8	4	12		diabetes mellitus, hashimoto's thyroiditis) And systemic autoimmune diseases- (multiple sclerosis, rheumatoid arthritis)
Month- F	ebruary-202	4		
Lectures	Practicals	Total	UNIT-II	Concept of immunodeficiency Vaccines- Properties of vaccines, active and passive immunization
8	4	12		
Month- N	March-2024			
2	2	04	UNIT-II	Types of vaccines attenuated, inactivated, DNA vaccines, toxoids.

Dr. Tejashri C. Patil

Dr. G. K. Sontakke

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Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

#### Term II

Semester: IV

Subject: Cell Biology, Genetics, Evolution and Ethology (Section II)

Name of the teacher: Dr. Tejashri C. Patil

Course: B. Sc. II

Month -	January- 20	24		
Lectures	Practicals	Total		Direct Evidences of Evolution: Types of fossils, Process of fossilization, Dating of
4	4	08		fossils
Month- F	ebruary-202	4		
Lectures	Practicals	Total		Species Concept: Biological species concept (Advantages and
4	4	08		limitations); Modes of speciation
Month- N	March-2024			
4	4	08	UNIT- IV	(Allopatric, Sympatric, Peripatric and Parapatric) Extinction: Mass extinction (Causes, Names of five major extinctions, K-T extinction in detail), Role of Extinction in evolution.
Month- A	April-2024			
2	2	04	UNIT- IV	K-T extinction in detail), Role of Extinction in evolution

Dr. Tejashri C. Patil

Dr. G. K. Sontakke

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"MAPTWERED AUTONOMOUS"

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### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

Term II

Semester: II

Teacher Name: - Ms. P. S. Shetfalkar

Subject: Animal Diversity II

Course title: B.Sc. I

Mon	th: Decemb	er	Module unit	Sub unit planned
Lectures	Practical	Total		Protochordata: General characters and
8	8	12	. Unit-I	Classification of Protochordata
Month: January			Module unit	Sub unit planned
Lectures	Practical	Total	Unit-I	Agnatha: General characters of Agnatha and
8	8	12		Classification of cyclostomes up to classes
Mon	Month: February		Module unit	Sub unit planned
Lectures	Practical	Total	TI-it I	Pisces: General characters of Pisces, General characters of Chondrichthyes and Osteichthyes
8	8	12	Unit -I	with examples; aquatic adaptations of fishes
Month: March		Module unit	Sub unit planned	
Lectures	Practical	Total		Amphibia: General features and Classification up
8	8	12	Unit-I	to orders; Parental care in Amphibia

Ms. P. S. Shetfalkar

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Dr. G. K. Sontakke

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#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

Term II

Semester: VI

Teacher Name: -Ms. P. S. Shetfalkar

Subject: Aquatic Biology

Course title: B.Sc. III

Mon	th: Decemb	er	Module unit	Sub unit planned
Lectures	Practical	Total		Marine Biology
4	00	4	Unit-II	Introduction of marine ecosystem: Structure & zonation of sea & ocean
Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		2. Physico-chemical properties of seawater- salinity, density, viscosity, surface tension, concept of chlorinity and salinity of sea water.
4	00	4	Unit-II	
Mon	th: Februa	ry	Module unit	Sub unit planned
Lectures	Practical	Total	Unit-II	3. Coral & coral reefs: Types & economic
4	00	4		importance
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total	Unit-II	4. Continental shelf, adaptations of deep sea
4	00	4		organisms.

Ms. P. S. Shetfalkar

Dr. G. K. Sontakke

Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

### **Annual Teaching Plan**

Term II

Semester: VI

Subject: Ecology and Toxicology

Name of the teacher: Miss. Namrata A. Jadhav

Course: B. Sc. III

Month: December, 2023			Module/unit	Sub-units Planned
Lectures	Practical	Total		
04	-	04	Unit I	Introduction and scope of ecology The structure, function, types ecosystem, abiotic and biotic components,
Month: J	anuary, 20	24	Module/unit	Sub-units Planned
Lectures	Practical	Total		
08	-	08	Unit I	Concept of habitat & niche- niche width and overlap, fundamental & realised niche, Food chain, food web and ecological pyramids, Species interactions-types of interaction (competition, predation, commensalism, parasitism, mutualism, amensalism)
Month: February, 2024			Module/unit	Sub-units Planned
Lectures	Practical	Total		
08	-	08	Unit I	Community ecology: Nature of communities, characteristics (species richness, dominance, diversity, abundance), ecotone and edge effect, Ecological succession -Types of succession (primary, secondary), stages of succession, mechanisms of succession, types of seres (hydrosere, lithosere)
Month: March, 2024			Module/unit	Sub-units Planned
Lectures	Practical	Total		
02	-	02	Unit I	Ecological adaptation in aquatic, desert & terrestrial animals

Miss. Namrata A. Jadhav

Dr. G. K. Sontakke

Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

### **Annual Teaching Plan**

Term II

Semester: IV

Subject: Cell Biology, Genetics, Evolution and Ethology (Section-II)

Name of the teacher: Miss. Namrata A. Jadhav

Course: B. Sc. II

Month: J	anuary, 20	24	Module/unit	Sub-units Planned
Lectures	Practical	Total		
04	04	08	Unit I	History of Life- Major events in history of life, Geological time scale
Month: February, 2024			Module/unit	Sub-units Planned
Lectures	Practical	Total		
04	04	08	Unit I	Introduction to Evolutionary Theories- Lamarckism, Darwinism, Neo-Darwinism,
Month: March, 2024			Module/unit	Sub-units Planned
Lectures Practical Total				
04	04	08	Unit I	Evolutionary Change- Organic variations, Isolating mechanisms, Natural selection (Example: Industrial melanism)
Month: April, 2024			Module/unit	Sub-units Planned
Lectures	Practical	Total		
02	02	04	Unit I	Types of natural selection (Directional, Stabilizing, Disruptive), Artificial selection

Miss. Namrata A. Jadhav

Dr. G. K. Sontakke

Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

# Annual teaching plan

Term II

Semester: IV

Subject: Cell Biology, Genetics, Evolution and Ethology (Section I)

Name of the teacher: Ms. Akshata P. Sutar

Course: B. Sc. II

Month	January- 20	24		
Lectures	Practicals	Total	UNIT-II	Structure of Biomolecules - DNA, RNA and its types Ultra-structure of cell organelle Structure of prokaryotic and eukaryotic cell,
04	04	08		
Month- F	ebruary-202	4		
Lectures	Practicals	Total	UNIT- II	Ultra structure and function of – Plasma membrane, Nucleus, Mitochondria, Golgi apparatus, Endoplasmic reticulum, Ribosome, lysosomes
04	04	08		
Month- N	Aarch-2024			
04	04	08	UNIT- II	Introduction to cell cycle and cell division Mendelian Genetics and its Extension Terminology in genetics, Principles of inheritance
Month- A	pril-2024			
02	02	04	UNIT- II	Chromosomal theory of inheritance, Incomplete dominance and codominance, Multiple alleles with respect to ABO

Ms. Akshata P. Sutar

Dr. G. K. Sontakke

Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan Term II

Semester: VI

Subject: Ecology and Toxicology

Name of the teacher: Ms. Akshata P. Sutar

Course: B. Sc. III

Month-December-2023			Module/Unit:	Sub-units planned	
Lectures	Practicals	Total	UNIT-II	Definition, history, scope & divisions of toxicology.	
02	-	02			
Month -	January- 2	024			
Lectures	Practicals	Total	UNIT-II	Brief idea of- Dose-effect and dose-response relationship - acute toxicity, sub-acute toxicity, chronic toxicity, organ specific toxicity (neurotoxicity, hepatotoxicity, nephrotoxicity)	
04	-	04			
Month- I	February-20	024			
Lectures		Total	UNIT-II	Heavy metal Toxicity- Mercury, lead, cadmium. Classification of toxic agents- Natural toxins, animal toxins	
04	-	04			
Month-	March-2024				
02	-	02	UNIT-II	plant toxins, food toxins, and chemical toxins	

Ms. Akshata P. Sutar

Dr. G. K. Sontakke

Shri Swami Vivekanand Shikshan Sanstha's

#### Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Zoology Academic year: 2023-2024

#### Annual teaching plan

Term II

Semester: II

Subject: Structural organisation in animal

Name of the teacher: Ms. Pratiksha R. Gaikwad

Course: B. Sc. I

Month - January, 2024			Module unit	Sub unit planned
Lectures	Practicals	Total	a b	Prokaryotic and eukaryotic cells- Organization in a Multicellular Animal: a. Cellular level of organization b. Tissue Level of organization c. Organ Level of organization
04	04	08		
Month- I	February, 20	024		
08	04	12	UNIT-I	Types of animal tissues a. Epithelial tissue b. Connective Tissue c. Muscle tissue d. Neural tissue  Sense organ- Photoreceptor, Tangoreceptors, Statoacoustic
Month- N	March, 2024			
08	04	12	UNIT- II	Study of various systems in human a. Digestive system b. Nervous system c. Circulatory system d. Male reproductive system e. Female reproductive system
Month-	April, 2024			
04	02	06	UNIT- II	f. Respiratory system g. Skeletal system h. Endocrine gland

Ms. Pratiksha R. Gaikwad

Dr. G. K. Sontakke

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