

"Education for Knowledge, Science and Culture"

-Shikshanmaharshi Dr. Bapuji Salunkhe


Shri Swami Vivekanand Shikshan Sanstha's

**Vivekanand College, Kolhapur (Autonomous)**  
**Department of Zoology**

## **Annual Teaching Plan 2022-2023**

1. **Dr. G. K. Sontakke**
2. **Dr. T. C. Gaupale**
3. **Miss. N. A. Patel**
4. **Dr. T. C. Patil**
5. **Dr. S. S. Desai**
6. **Miss. Y. S. Pujari**
7. **Miss. P.S. Shetfalkar**
8. **Miss. V. K. Patil**
9. **Mr. N. F. Shaikh**



  
**Dr. G. K. Sontakke**  
**HEAD**  
DEPARTMENT OF ZOOLOGY  
VIVEKANAND COLLEGE, KOLHAPUR  
(AUTONOMOUS)

**Vivekanand College, Kolhapur (Autonomous)**  
Department of Zoology  
Academic year: 2022-2023

**Annual teaching plan**

**Term I**

**Semester: V**


**Subject: Applied Zoology**

**Teacher Name: - Dr. G. K. Sontakke**

**Course title: B.Sc. III**

<b>Month: August</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
1	1	2	Unit I	<b>Introduction to Host-parasite Relationship:</b> Host, Definitive host, Intermediate host,
<b>Month: : September</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Parasitism, Types of Parasites, Symbiosis, Commensalism, Reservoir, Zoonosis, Types of parasites, Transmission, Prevention and control of diseases: Tuberculosis, Typhoid
<b>Month: October</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Transmission, Prevention and control of diseases: Dengue & swine flue Life history and pathogenicity of Entamoeba histolytica
<b>Month: November</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit III	<b>Parasitic Protozoa:</b> Life history and pathogenicity of Plasmodium vivax, Trichomonas <b>Insects of Economic Importance:</b> Biology, Control and damage caused by Helicoverpa armigera, Pyrrilla perpusilla and Papilio demoleus
<b>Month: December</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
2	2	4	Unit IV	Insects of Economic Importance: Biology, Control and damage caused by Callosobruchus chinensis, Sitophilus oryzae and Tribolium castaneum, milibug, aphids and white fly

  
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**DEPARTMENT OF ZOOLOGY**  
Academic year: 2022-23

**Annual teaching plan (Practical)**

Teacher Name: -Dr. G. K. Sontakke

Class	Practical No.	Batch	Practical based on paper
B. Sc. I	Practical I	F13, F14	Animal Diversity (Section I) Comparative Anatomy and Developmental biology of Vertebrates (Section II)
B. Sc. II	Practical I	S13	Physiology and Biochemistry
B. Sc. III	Practical III	B1	Aquatic biology



Name and Signature of Teacher



Name and Signature of HOD

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**Annual teaching plan**

**Term I**

**Semester:** III


**Subject:** Mammalian Physiology and biochemistry

**Teacher Name:** - Dr. Tekchand C. Gaupale

**Course title:** B.Sc. II

<b>Month: August</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
1	1	2	Unit III	Introduction to Endocrine Glands
<b>Month: : September</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit IV	Endocrine Glands : Structure and function of Hypothalamus, Pituitary, Thyroid
<b>Month: October</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit IV	Endocrine Glands : Structure and function of Pancreas, Adrenal gland
<b>Month: November</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit IV	Enzymes: Introduction, Mechanism of action, Factors affecting enzyme activity,
<b>Month: December</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
2	2	4	Unit IV	Inhibition and Regulation of enzyme action

  
Dr. Tekchand C. Gaupale

  
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Department of Zoology  
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Annual teaching plan

Term I

Semester: V

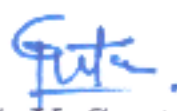
Teacher Name: - Dr. Tekchand C. Gaupale

Subject: Applied Zoology

Course title: B.Sc. III

Month: August			Module unit	Sub unit planned
Lectures	Practical	Total		
1	1	2	Unit VIII	Fish technology
Month: : September			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IX	Fish farming construction & maintenance, Induced breeding Transportation of fish
Month: October			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit X	Animal feed preparation , Cattle feed, rat feed, fish feed, poultry feed
Month: November			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8		Animal and Crop waste Management Poultry waste management,
Month: December			Module unit	Sub unit planned
Lectures	Practical	Total		
2	2	4		Sugarcane and wheat waste management

  
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Academic year: 2022-23

**Annual teaching plan (Practical)**

**Teacher Name:** -Dr. T.C. Gaupale

Class	Practical No.	Batch	Practical based on paper
B. Sc. I	Practical I	F11, F12, F9	Animal Diversity (Section I) Comparative Anatomy and Developmental biology of Vertebrates (Section II)
B. Sc. II	Practical I	S11, S12	Physiology and Biochemistry
B. Sc. III	Practical II	B1	Applied Zoology

  
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**Annual teaching plan**

**Term I**

**Semester: V**

**Teacher Name: - Ms. Najnin A. Patel**

**Subject: Animal Biotechnology**

**Course title: B.Sc. III**

<b>Month: August</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
1	1	2	Unit II	Cloning Vectors: Plasmid, Cosmids,
<b>Month: : September</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Cloning Vectors: Phagemids, Lambda , Bacteriophage, , BAC, MAC and Expression vectors (Characteristics) Restriction enzymes: Nomenclature, detailed study of Type II. Transformation techniques: Calcium chloride method and Electroporation
<b>Month: October</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Construction of genomic DNA & cDNA library Southern, Northern, Western blotting
<b>Month: November</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Sanger method, Polymerase Chain Reaction,
<b>Month: December</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
2	2	4	Unit II	DNA finger printing

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Department of Zoology

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Annual teaching plan

Term I

Semester: I


Teacher Name: - Ms. Najnin A. Patel

Subject: Animal Diversity

Course title: B.Sc. I

Month: August			Module unit	Sub unit planned
Lectures	Practical	Total		
1	1	2	Unit IV	Class-Reptiles General features and classification up to order
Month: : September			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	classification up to order in class reptiles Venomous and non-venomous snake
Month: October			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Types of venom and Mechanism of Action
Month: November			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Class Aves General features and classification up to order
Month: December			Module unit	Sub unit planned
Lectures	Practical	Total		
2	2	4	Unit IV	Flight Adaptation in birds

  
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DEPARTMENT OF ZOOLOGY  
Academic year: 2022-23

Annual teaching plan (Practical)

Teacher Name: - Ms. N. A. Patel

Class	Practical No.	Batch	Practical based on paper
B. Sc. I	Practical I	F7	Animal Diversity (Section I) Comparative Anatomy and Developmental biology of Vertebrates (Section II)
B. Sc. II	Practical I	S13	Physiology and Biochemistry
B. Sc. III	Practical I	B1	Animal Biotechnology



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**Annual teaching plan**

**Term I**

**Semester:** III


**Subject:** Mammalian Physiology and biochemistry

**Teacher Name:** - Dr. Tejashri C. Patil

**Course title:** B.Sc. II

<b>Month: August</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
1	1	2	UNIT-II	Pulmonary Ventilation
<b>Month: : September</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	UNIT-II	Respiratory volumes and capacities, Transport of oxygen and carbon dioxide in blood
<b>Month: October</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	UNIT -II	Haldane effect, Bohr's effect, Chloride Shift Structure of nephron
<b>Month: November</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	UNIT-II	Glomerular capsule, mechanism of urine formation, counter-current mechanism
<b>Month: December</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
2	2	4	UNIT-II	composition of blood, cardiac cycle, Origin and Conduction of the cardiac impulse

  
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Department of Zoology  
Academic year: 2022-2023

Annual teaching plan

Term I

Semester: V


Subject: Animal Biotechnology

Teacher Name: - Dr. Tejashri C. Patil

Course title: B.Sc. III

Month: August			Module unit	Sub unit planned
Lectures	Practical	Total		
1	1	2	Unit IV	Animal cell culture, Cell Culture techniques
Month: : September			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Animal cell culture types, Requirements, types of culture media
Month: October			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Sterilization techniques, stem cell culture- types and methods of stem cell culture
Month: November			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Application of stem cell culture, Recombinant DNA technology, Microtechnique,
Month: December			Module unit	Sub unit planned
Lectures	Practical	Total		
2	2	4	Unit IV	Application of Biotechnology in animal husbandry, Medicine and Agriculture

  
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DEPARTMENT OF ZOOLOGY  
Academic year: 2022-23**

**Annual teaching plan (Practical)**

**Teacher Name: -Dr. T. C. Patil**

Class	Practical No.	Batch	Practical based on paper
B. Sc. II	Practical II	S13	Physiology and Biochemistry
B. Sc. III	Practical IV	B1	Immunology

  
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Department of Zoology  
Academic year: 2022-2023

Annual teaching plan

Term I

Semester: V

Teacher Name: - Dr. Sneha S. Desai

Subject: Animal Biotechnology

Course title: B.Sc. III

Month: August			Module unit	Sub unit planned
Lectures	Practical	Total		
1	1	2	Unit I	Concept & Scope of Biotechnology, DNA structure
Month: : September			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	DNA structure and its types, Structure of RNA and its types
Month: October			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	DNA replication- semi-conservatives mode
Month: November			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	Transcription in Prokaryotes & Eukaryotes
Month: December			Module unit	Sub unit planned
Lectures	Practical	Total		
2	2	4	Unit I	Translation in Prokaryotes & Eukaryotes



Dr. Sneha S. Desai



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Department of Zoology  
Academic year: 2022-2023

**Annual teaching plan**

**Term I**

**Semester: I**

**Teacher Name: - Dr. Sneha S. Desai**

**Subject: Animal Diversity**

**Course title: B.Sc. I**

<b>Month: August</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
1	1	2	Unit III	Class: Pisces: General features and classification up to order
<b>Month: : September</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit III	Class: Pisces: Classification up to order Difference between cartilaginous and bony fishes
<b>Month: October</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit III	Mechanism and Importance of osmoregulation in fishes
<b>Month: November</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit III	Class-Amphibia: General features and classification up to order
<b>Month: December</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
2	2	4	Unit III	Parental care in Amphibia



**Dr. Sneha S. Desai**




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DEPARTMENT OF ZOOLOGY  
Academic year: 2022-23

**Annual teaching plan (Practical)**

Teacher Name: - Dr. S. S. Desai

Class	Practical No.	Batch	Practical based on paper
B. Sc. I	Practical I	F7	Animal Diversity (Section I) Comparative Anatomy and Developmental biology of Vertebrates (Section II)
B. Sc. II	Practical II	S11, S12	Cell Biology, Genetics, Evolution and ethology
B. Sc. III	Practical I	B2	Animal Biotechnology

  
Name and Signature of Teacher

  
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DEPARTMENT OF ZOOLOGY  
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Department of Zoology  
Academic year: 2022-2023

**Annual teaching plan**

**Term I**

**Semester:** III

**Subject:** Mammalian Physiology and biochemistry

**Teacher Name:** - Ms. Y. S. Pujari

**Course title:** B.Sc. II

<b>Month: August</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
1	1	2	Unit-I	Nerve & Muscle Introduction
<b>Month: : September</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit-I	Structure of Neuron Resting membrane potential, Origin of action potential & its propogation in non-myleinated nerve fiber,
<b>Month: October</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit -I	Ultra-Structure of skeletal muscle Molecular & Chemical basis of muscle contraction
<b>Month: November</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit-III	Protein Metabolism, structure of amino acids, types of proteins, transamination
<b>Month: December</b>			<b>Module unit</b>	
Lectures	Practical	Total		
2	2	4	Unit-III	Deamination and urea cycle

*Y. S. Pujari*

Ms. Y. S. Pujari

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Department of Zoology  
Academic year: 2022-2023

**Annual teaching plan**

**Term I**

**Semester: V**

**Subject: Applied Zoology**

**Teacher Name: - Ms. Y. S. Pujari**

**Course title: B.Sc. III**

<b>Month: August</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
1	1	2	Unit V	Insects of medical importance and control of <i>Pediculus humanus corporis</i> ,
<b>Month: : September</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit V	Insects of medical importance and control of <i>Anopheles, Culex, Aedes, Xenopsylla cheopis</i>
<b>Month: October</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit VI	Dairy technology 6 Selection of breed, Types of breeds, ( 4 exotic and 4 indigenous), Management ,Food, fodder and Shelter
<b>Month: November</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit VII	Poultry Farming 6 Principle of poultry breeding, Types of poultry breeds broilers & Layers, Management,
<b>Month: December</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
2	2	4	Unit VII	Feeding ,Shelter, processing and preservation of eggs, Back yard poultry forming

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Academic year: 2022-23

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Teacher Name: -Ms. Y. S. Pujari

Class	Practical No.	Batch	Practical based on paper
B. Sc. I	Practical I	F9	Animal Diversity (Section I) Comparative Anatomy and Developmental biology of Vertebrates (Section II)
B. Sc. II	Practical II	S11, S12	Physiology and Biochemistry
B. Sc. III	Practical III	B2	Aquatic biology

*Y. S. Pujari*

Name and Signature of Teacher

*[Signature]*

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Department of Zoology

Academic year: 2022-2023

Annual teaching plan

Term I

Semester: I


Subject: Animal Diversity

Teacher Name: - Ms. P. S. Shetfalkar

Course title: B.Sc. I

Month: August			Module unit	Sub unit planned
Lectures	Practical	Total		
1	1	2	Unit-I	Importance of Animal Taxonomy
Month: September			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit-I	<b>Kingdom Protista-</b> General characters and classification up to classes; locomotion in Protozoa <b>Phylum Porifera-</b> General characters and classification up to classes; Canal System in Sycon
Month: October			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit -I	<b>Phylum Cnidaria-</b> General characters and classification up to classes; Polymorphism in obelia
Month: November			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit-III	<b>Phylum- Mollusca-</b> General characters and classification up to classes; Economic Importance of mollusca
Month: December			Module unit	Sub unit planned
Lectures	Practical	Total		
2	2	4	Unit-III	<b>Phylum- Echinodermata-</b> General characters and classification up to classes; Water Vascular system in Asteroidea; pedicellaria Echinodermata

  
Ms. P. S. Shetfalkar

  
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Academic year: 2022-23**

**Annual teaching plan (Practical)**

**Teacher Name:** - Ms. P. S. Shetfalkar

<b>Class</b>	<b>Practical No.</b>	<b>Batch</b>	<b>Practical based on paper</b>
B. Sc. I	Practical I	F11, F12, F13, F14	Animal Diversity (Section I) Comparative Anatomy and Developmental biology of Vertebrates (Section II)
B. Sc. II	Practical II	S11, S12	Cell Biology, Genetics, Evolution and ethology

  
**Name and Signature of Teacher**

  
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Department of Zoology  
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**Annual teaching plan**

**Term I**

**Semester: I**

**Teacher Name: - Ms. Vaishali K. Patil**

**Subject: Animal Diversity**

**Course title: B.Sc. I**

<b>Month: August</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
1	1	2	Unit I	Phylum Platyhelminthes : General characters and classification up to classes;
<b>Month: : September</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit IV	Morphology of <i>Taenia solium</i> and its parasitic adaptations, Preventive measures and control measures Phylum Nematelminthes: General characters and classification up to classes
<b>Month: October</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit IV	Life history of <i>Ascaris lumbricoides</i> and its parasitic adaptations, Preventive measures and control measures Phylum Annelida: General characters and classification up to classes
<b>Month: November</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit IV	Metamerism in Annelida Phylum Arthropoda: General characters and classification up to classes
<b>Month: December</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
2	2	4	Unit IV	Social behaviour in honey bee

*V. Patil*

**Ms. Vaishali K. Patil**

*G. K. Sontakke*

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**Shri Swami Vivekanand Shikshan Sanstha's  
VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)  
DEPARTMENT OF ZOOLOGY  
Academic year: 2022-23**

**Annual teaching plan (Practical)**

**Teacher Name: - Ms. V. K. Patil**

<b>Class</b>	<b>Practical No.</b>	<b>Batch</b>	<b>Practical based on paper</b>
B. Sc. II	Practical II	B1, BB	Physiology and Biochemistry
B. Sc. III	Practical IV	B2	Immunology

*V.K. Patil*

**Name and Signature of Teacher**

**Name and Signature of HOD**

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Vivekanand College, Kolhapur (Autonomous)

Department of Zoology  
Academic year: 2022-2023

Annual teaching plan

Term I


Semester: I

Teacher Name: - Mr. N. F. Shaikh

Subject: Animal Diversity

Course title: B.Sc. I

Month: August			Module unit	Sub unit planned
Lectures	Practical	Total		
1	1	2	Unit-III	Phylogenetic tree in Chordata
Month: September			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit-III	Protochordates: General features and Phylogeny of Protochordata
Month: October			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit -I	Agnatha: General features of Agnatha and classification of cyclostomes up to classes
Month: November			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit-III	Peculiar characteristics of Petromyzon and myxine, Mammals: Classification up to orders
Month: December			Module unit	Sub unit planned
Lectures	Practical	Total		
2	2	4	Unit-III	Dentition in mammals-rabbit, rat, human, dog, sheep

  
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**DEPARTMENT OF ZOOLOGY**  
Academic year: 2022-23

**Annual teaching plan (Practical)**

**Teacher Name:** - Mr. N. F. Shaikh

Class	Practical No.	Batch	Practical based on paper
B. Sc. I	Practical I	F10, F8	Animal Diversity (Section I) Comparative Anatomy and Developmental biology of Vertebrates (Section II)
B. Sc. II	Practical I	S8, S9, S11, S12	Physiology and Biochemistry
B. Sc. III	Practical IV	B2	Immunology

  
Name and Signature of Teacher

  
Name and Signature of HOD

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Department of Zoology

Academic year: 2022-2023

Annual teaching plan

Term II

Semester: VI

Subject: Ecology & Aquatic Biology

Teacher Name: - Dr. Gajanan K. Sontakke

Course title: B.Sc. III

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Freshwater Biology Lakes: Origin and classification, Lake as an Ecosystem, Lake morphometry, Physico-chemical Characteristics
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Nutrient Cycles in Lakes- Nitrogen, Sulphur and Phosphorous
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit VI	Management of Aquatic Resources: Causes of pollution: Agricultural, Industrial, Sewage, Thermal and Oil spills
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit VI	Eutrophication, Management and conservation (legislations), Sewage treatment, Water quality assessment- BOD and COD.

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Department of Zoology

Academic year: 2022-2023

Annual teaching plan

Term II

Semester: IV


Subject: Cell biology, Genetics, Evolution and Ethology

Teacher Name: - Dr. Tekchand C. Gaupale

Course title: B.Sc. II

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	Structure of Biomolecules - DNA, RNA and its types, Structure of prokaryotic and eukaryotic cell
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	Ultra structure and function of - Plasma membrane, Nucleus, Mitochondria, Golgi apparatus, Endoplasmic reticulum, Ribosome, lysosomes
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	Introduction to cell cycle and cell division
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	Mendelian Genetics and its Extension: Terminology in genetics, Principles of inheritance, Chromosomal theory of inheritance, Incomplete dominance and codominance, Multiple alleles with respect to ABO

  
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Department of Zoology

Academic year: 2022-2023

**Annual teaching plan**

**Term II**

**Semester: VI**

**Teacher Name: - Dr. Tekchand C. Gaupale**

**Subject: Immunology**

**Course title: B.Sc. III**

<b>Month: January</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
8	4	12	Unit I	Overview of the Immune System
<b>Month: February</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
8	4	12	Unit II	Cells and Organs of the Immune System Hematopoiesis,
<b>Month: March</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
8	4	12	Unit II	Cells of immune system, Organs (primary and secondary lymphoid organs) of the immune system
<b>Month: April</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
8	4	12	Unit II	Antigens : Basic properties of antigens, B and T cell epitopes, haptens and adjuvants

  
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Department of Zoology

Academic year: 2022-2023

Annual teaching plan

Term II

Semester: II

Subject: Comparative Anatomy & Developmental Biology of Vertebrates

Teacher Name: -Ms. Najnin A. Patel

Course title: B.Sc. I

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit III	Early embryonic development Gametogenesis- Spermatogenesis, Oogenesis with reference to mammals
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit III	External fertilization (Amphibia), internal fertilization mammals, early embryonic development
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit III	Fate map & Neurulation in frog embryo
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Chick embryology Development of chick embryo up to 72 hours

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Department of Zoology  
Academic year: 2022-2023

Annual teaching plan

Term II

Semester: VI


Subject: Immunology

Teacher Name: -Ms. Najnin A. Patel

Course title: B.Sc. III

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit IV	Antibodies – structure, class & function of antibodies Hybridoma technology- monoclonal & polyclonal antibody
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit IV & V	ELISA & its types Structure and functions of MHC, exogenous pathways of antigen presentation and processing
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit V	Endogenous pathways of antigen presentation and processing, Basic properties and functions of cytokines
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit V	Complement system: Components and pathways.

  
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Department of Zoology

Academic year: 2022-2023

Annual teaching plan

Term II

Semester: IV

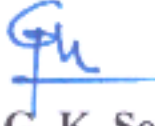
Subject: Cell biology, Genetics, Evolution and Ethology

Teacher Name: - Dr. Tejashri C. Patil

Course title: B.Sc. II

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit III	Major events in history of life, geological time scale
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit III	Introduction to evolutionary Theories Lamarckism, Darwinism
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit IV	Neo Darwinism, organic Variation, types of selection
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit IV	Ethology: Animal Behavior and Mimicry

  
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Department of Zoology

Academic year: 2022-2023

Annual teaching plan

Term II

Semester: VI


Subject: Immunology

Teacher Name: -Dr. Tejashri C. Patil

Course title: B.Sc. III

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit VI	Gell and Coombs classification of hypersensitivity,
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit VI	Concept of autoimmunity, central and peripheral tolerance
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit VI	Autoimmune Disorders, concept of Immunodeficiency
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
8	4	12	Unit VII	Vaccines, types of vaccine, Production of vaccine

  
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Department of Zoology

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Annual teaching plan

Term II

Semester: II


Subject: Comparative Anatomy and Developmental Biology of Vertebrates

Teacher Name: -Dr. Sneha S. Desai

Course title: B.Sc. I

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	<b>Integumentary System</b> Derivatives of integument w.r.t. glands and digital tips
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	<b>Skeletal System</b> Appendicular Skeletons
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit I	<b>Digestive System</b> Brief account of alimentary canal and digestive glands
Month: April			Module unit	Sub unit planned
4	4	8	Unit I	<b>Respiratory System</b> Brief account of Gills, lungs, air sacs and swim bladder

  
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Department of Zoology

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**Annual teaching plan**

**Term II**

**Semester: VI**

**Subject: Ecology & Aquatic Biology**

**Teacher Name: -Dr. Sneha S. Desai**

**Course title: B.Sc. III**

<b>Month: January</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Aquatic Biomes- Brief introduction of the aquatic biomes
<b>Month: February</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Freshwater ecosystem (wetlands, streams and rivers)
<b>Month: March</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Estuaries, intertidal zones, oceanic pelagic zone
<b>Month: April</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit II	Marine benthic zone and coral reefs

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Department of Zoology

Academic year: 2022-2023

Annual teaching plan

Term II

Semester: IV

Subject: Cell biology, Genetics, Evolution & Ethology

Teacher Name: - Ms. Yogita S. Pujari

Course title: B.Sc. II

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Direct evidences of evolution Types of fossils
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Process of fossilization Dating of fossils Geiger-Muller Counter
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	Species concept Biological species concept Modes of speciation
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit IV	<b>Extinction</b> Mass extinction (Causes, Names of five major extinctions, K-T extinction in detail), Role of extinction in evolution

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Ms. Yogita S. Pujari

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**Vivekanand College, Kolhapur (Autonomous)**  
Department of Zoology  
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**Annual teaching plan**

**Term II**

**Semester: VI**

**Subject: Ecology & Aquatic Biology**

**Teacher Name: -Ms. Yogita S. Pujari**

**Course title: B.Sc. III**

<b>Month: January</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit I	Ecology : Introduction and scope of Ecology, Structure
<b>Month: February</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit I	Function, types & components of ecosystem
<b>Month: March</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit I	energy flow and cycling of minerals food chain, food web & Ecological pyramids
<b>Month: April</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit I	Introduction to biomes and their types

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**Vivekanand College, Kolhapur (Autonomous)**  
Department of Zoology  
Academic year: 2022-2023

**Annual teaching plan**

**Term II**


**Semester: I**


**Subject: Comparative anatomy and Developmental biology of vertebrates**

**Teacher Name: -Ms. P. S. Shetfalkar**

**Course title: B.Sc. I**

<b>Month: January</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	4	Unit III	Late Embryonic Development- Implantation of embryo in humans,
<b>Month: February</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit III	Formation of human placenta and function, other types of placenta in mammals
<b>Month: March</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit IV	Control of Development Fundamental processes in development (brief idea) – Gene activation, specification
<b>Month: April</b>			<b>Module unit</b>	<b>Sub unit planned</b>
Lectures	Practical	Total		
4	4	8	Unit IV	Determination, Differentiation, intercellular communication, cell movements and cell death

  
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Department of Zoology

Academic year: 2022-2023

Annual teaching plan

Term II

Semester - VI


Name of the teacher: Miss Pallavi Sanjay Shetfalkar

Subject: Ecology and Aquatic Biology

Course Title: B. Sc. III

Month - January			Module/Unit:	Sub-units planned
Lectures	Practical	Total		
02	04	06	Unit III	<b>Streams and Their Conservation</b> Different stages of stream development, Physico-Chemical Environment,
Month- February			Module/Unit:	Sub-units planned
Lectures	Practical	Total		
02	04	06	Unit III	Adaptation of hill stream fishes and conservation of streams
Month - March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
04	04	08	Unit V	<b>Marine Biology</b> Salinity and Density of sea water, Continental shelf
Month - April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		
04	04	08	Unit V	Adaptation of deep sea organism, coral reef, Sea Weeds

  
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Annual teaching plan

Term II

Semester: II

Subject: Comparative Anatomy and Developmental Biology of Vertebrates

Teacher Name: -Mr. N. F. Shaikh

Course title: B.Sc. I

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit II	<b>Circulatory System</b> Evolution of heart and aortic arches
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit II	<b>Urinogenital System</b> Succession of Kidney, Evolution of urinogenital ducts
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit II	<b>Nervous System</b> Comparative account of brain
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit II	<b>Sense Organs</b> Types of receptors

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Department of Zoology  
Academic year: 2022-2023

Annual teaching plan

Term II

Semester: IV

Subject: Cell Biology, Genetics, Evolution and Ethology

Teacher Name: - Mr. N. F. Shaikh

Course title: B.Sc. II

Month: January			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit II	Linkage, Crossing Over Types of linkage, and mechanism of crossing over, cytological evidence of crossing over
Month: February			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit II	Significance of crossing over, Chromosomal Mutation, Deletion, Duplication, Inversion
Month: March			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit II	Translocation, Aneuploidy, Polyploidy, Gene Mutation,
Month: April			Module unit	Sub unit planned
Lectures	Practical	Total		
4	4	8	Unit II	Induced versus Spontaneous mutation, Frameshift mutation, Point Mutation



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