Rajarshi Shahu Mahavidyalaya, Latur
(Autonomous)
Structured Work Plan for Teaching
(21 SEPT – 2021 to 15 Jan. 2021)

Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Theory Papers	Practical papers
1	B.Sc. I (sem-I)	Mr.Rajkumar D. Kamble	Zoology	Cell Biology	Lab.Course-I
2	Bsc II			Molecular Biology and Genetic engineering	Lab Course -IV
3	MSc. I(sem-I)			Biochemistry	Lab Course -IV
4	MSc. II(sem-IV)			Animal physiology	Lab Course -XIII

Summary of Lesson Plan First Term: 21 September to 15 Jan

Name of Teacher:Mr.Rajkumar Dattatraya Kamble. Sub: Zoology Class : B.Sc. I (First Semester)

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1	Cell Biology	UNIT-I Unit – I I) Introduction to Cell Biology ii) Cell and Cell Theory iii) Ultra structure of prokaryotic and eukaryotic cell iv) Comparison between plant and animal cell v) Structure and Function of plasma membrane	28 September to 13 October	02 02 02 02 02 12 lectures-U1	Seminar PowerPoint Presentation. / Group discussion.	Chapters 1, 2 on 12.10.2021 Assignment
2		UNIT-II Structure and Function of Endoplasmic reticulum ii) Structure and Function of Golgi complex iii) Structure and Function of Mitochondria iv) Structure and Function of Ribosome v) Structure and Function of Lissome	18 October To 9 November	02 02 02 02 02 02 12 L-U2	Seminar PowerPoint Presentation. / Group discussion	Chapters 1, 2 & 3 on 20.12.2020 Assignment Surprised Test

3		UNIT-III Structure and function of Nucleus and Chromosome ii) Cell cycle-Its regulation and Significance, iii) Mitosis, Meiosis and their significance. v) Apoptosis iv) Cell Fractionation and Centrifugation v) Autoradiography	10 November To 7 December	02 02 02 02 02 02 01 11 L-U3	Seminar Powerpoint Presentation. / Group discussion	Chapters 1, 2 & 3 on 20 January 2020 Assignment
4.		UNIT-IV Chromatography: - Paper, Thin layer, Column Chromatography ii) Electrophoresis-Principles and Working iii) Colorimeter- Principles and Working iv) PH meter- Principles and Working v) Micro-Technique and Microscopy	8 December-31 December	02 02 02 02 02 10L-U4	Seminar PowerPoint Presentation. / Group discussion	Chapters 1, 2 & 3 on 12.February 2020 Assignment

Summary of Lesson Plan

First Term: 17 December to 16 April

Name of Teacher: Mr. Rajkumar Dattatraya Kamble. Sub: Zoology Class: B.Sc. II (Fourth Semester)

Sr. No.	Unit and Chapter to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1	UNIT-I i)Introduction to Molecular Biology ii)Deoxyribonucleic acid (Structuture,properties,function and type of DNA) iii)Ribonucleic acid (Structure and types) Iv)Replication and genetic code	20 .12.2021 to 12 .01.22	03 03 03 03 12 lectures-U1	Seminar PowerPoint Presentation. / Group discussion.	Chapters 1, 2 on 12.01.2022 Assignment
2	UNIT-II i)Protein Synthesis ii)Gene Concept and Molecular structure of gene iii)Types of gene and Discontinuous genes (Exons and Introns) iv)Gene Expression in prokaryotes (Lac operons)Eukaryotes v)One gene one enzyme hypothesis and one polypeptide hyposthesis	17 jan To 14 feb	03 03 03 03 12 L-U2	Seminar PowerPoint Presentation. / Group discussion	Chapters 1, 2 & 3 on 14.02.2022 Assignment Surprised Test
3.	UNIT-III Introduction to genetic engineering-Mendel's to molecules 2 Tools: a)Enzymes i)lysing ii)ligases 3Nucleases (Exonucleases,Endonucleases, Restriction endonucleases enzymes) 4Synthestases (DNA polymerase Reverse Transcriptase Vectors :Cloning vectors (plasmid – pBR322,Bactriophage –lambda phage,Viruses-SV40, Cosmid vectors) and Expression Vcctors (shuttle vector) 3Techniques –a)Southern, Northern and Western Blotting b)PCR (Polymerase chain reaction 4 DNA sequencing	15 feb To 16 Mar	03 13 L-U3 03 03 03 03 01	Seminar Powerpoint Presentation. / Group discussion	Chapters 1, 2 & 3 on 16 Mar 2020 Assignment

4.	**UNIT-IV** **1)Gene Cloning** **2)Linking of desired gene with vector DNA** **3)Introduction of recombinant DNA into host cell** **4)Identification of recombinant DNA** **5)c-DNA libraries and genomic libraries** **6)Transgenesis and transgenic animal** **(Transgenic cattle,sheep,pig and fish** **7)Animal cloning and cloned animal(Dolly sheep)** **8)DNA fingerprinting**	21 Mar- 16 April	02 02 02 02 02 10L-U4 With vector	Seminar Powerpoint Presentation. / Group discussion	Chapters 1, 2 & 3 on 12.February 2020 Assignment

Summary of Lesson Plan
First Term: 21 September to 15 Jan
Name of Teacher:Mr Rajkumar Dattatraya Kamble **Subject: Zoology** **Class Msc. I (First Semester)**

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1	Biochemistry	UNIT-I : Biomolecules Characteristic features: Water, structure of liquid water, water as ideal biological solvent.• Problems and concepts related to mole, molarity, normality, buffers etc. Thermodynamics: Laws of thermodynamics, free energy, entropy, high energy bonds. Amino acids, peptides and polypeptides: The three dimensional structures of proteins, • the Ramachandran plot, α helix, β sheet. Structure of collagen, domain – basic unit of tertiary structure, quaternary structure, Functional diversity of proteins. Carbohydrates: Monosaccharides, disaccharides and polysaccharides, structure and• function Lipids: Chemistry of triglycerides, sterols, quinones and prostaglandins.• Nucleotides: Structure, function, properties and types of Nucleic acid. The RNA world•	29 September to 18 October	03 03 03 03 03	Seminar Powerpoint Presentation Group discussion.	Chapters 1, 2 on 17.10.2021 Assignment

2		UNIT-II : Carbohydrate and Lipid metabolism Glycolysis, glycogenolysis, gluconeogenesis, pentose phosphate pathway, glucoronic acid• pathway (emphasis on regulation) Citric acid cycle: Cyclic overview and reactions. Metabolic sources of acetyl CoA.• Regulation and amphibolic nature of the cycle. Glyoxylate cycle Dark reactions of Photosynthesis: CO2 fixation: C3, C4 and CAM pathways•	19 OCT To9 Nov	03 03 03 03 03	Seminar Powerpoint Presentation Group discussion	Chapters 1, 2 & 3 on 08.11.2020 Assignment Surprised Test
3.		UNIT-III Lipid and protein metabolism Lipid Metabolism: β oxidation of unsaturated and saturated fatty acid and its regulation.•Propoinyl CoA metabolism, significance of ketone bodies, Biosynthesis of palmitate and its• regulation. Mitochondrial and microsomal pathways of chain elongation, long term dietary changes and enzyme level. Metabolism of cholesterol: Biosynthesis of cholesterol and its regulation, lipoprotein• metabolism, chylomicrons, LDL, HDL, VLDHL. Amino acid metabolism: Transamination, deamination, Fate of amino acid skeleton, urea• cycle, precursors for compounds other than proteins, Genetic diseases.	10 novemberTo 30november	03 03 03 03 03	Seminar Powerpoint Presentation ./ Group discussion	Chapters 1, 2 & 3 on 29 NOV 2021 Assignment

4.		UNIT-IV Nucleotide Metabolism and Enzymology Nucleotide Metabolism: Salvage and de novo pathways of purine and pyrimidine• nucleotide biosynthesis. Formation of deoxyribonucleotides, origin of thymine. Enzymology:• Classification, Units, Specific Activity, Coenzymes.• Kinetics of enzyme catalyzed reactions, Effect of pH, Inhibitor, Activator.• Regulation of enzyme activities. , Isoenzyme: structure and function•Isoenzyme: structure and function•	1 Dec to 21 Dec	03 03 03 03 03	Seminar Powerpoint Presentation Group discussion	Chapters 1, 2 & 3 on 20 dec.February 2021 Assignment

Summary of Lesson Plan
Second Term : 16 December to 16 april
Name of Teacher: Mr.Rajkumar Dattatraya Kamble .**Sub: Zoology** **Class's (Fourth Semester)**

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1	Animal physiology	**Unit-I:** **Blood and circulation:** Blood corpuscles, Haemopoiesis and formed elements, Plasma function, blood volume, blood volume regulation, blood groups, Haemoglobin, immunity, homeostasis. **Cardiovascular System:** Comparative anatomy of heart structure, Myogenic Heart, specialized tissue, ECG – its principle and significance, cardiac cycle, Heart as a pump, blood pressure, neural and chemical regulation of all above.	20 Dec to 7 Jan	03 03 03 03 03	Seminar Power point Presentation Group discussion.	7.01.2022 Revision exam
2		**UNIT-II** **Respiratory system :**Comparison of respiration in different species, anatomical Considerations, transport of gases, exchange of gases, waste elimination, neural And chemical regulation of respiration. **Nervous system:** Neurons, action potential, gross neuroanatomy of the brain and spinal cord, central and peripheral nervous system, neural control of muscle Tone and posture. **Sense organs :** Vision, hearing and tactile response	10 Jan to 1 Feb	03 03 03 03 03	Seminar Power point Presentation Group discussion	01.02.2022 Revision exam

3.		**UNIT-III** **Excretory system :**Comparative physiology of excretion, kidney, urine Formation, urine concentration, waste elimination, micturition, regulation of water Balance, blood volume, blood pressure, electrolyte balance, acid-base balance. **Thermoregulation :**Comfort zone, body temperature – physical, chemical, Neural regulation, acclimatization. **Stress and adaptation**	2 Feb To 25 Feb	03 03 03 03 03	Seminar Power point Presentation Group discussion	Revision exam 25 feb 2022
4.		**UNIT-IV** **Digestive system: Digestion**, absorption, energy balance, BMR. **Endocrinology and reproduction :**Endocrine glands, basic mechanism of hormone action, hormones and diseases; reproductive processes, gametogenesis, ovulation, neuroendocrine regulation	28 Feb to 31 Mar	03 03 03 03 03 03 Revision exam 03 Quiz	Seminar Power point Presentation Group discussion	31Mar 2021 Revision exam

In charge Teacher
Mr. Rajkumar D Kamble

HOD
Dr. D.S.Rathod

Principal