



Shiv Chhatrapati Shikshan Sanstha's
Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Structured Work Plan for Teaching (Odd Semester)
Academic Year 2019-20

Details of Classes to be taught

Sr. No.	Class	Name of Asst. Prof.	Subject	Paper
1	B.Sc.III	DR.K.D.SAVANT	Botany	IX Plant Physiology and Metabolism
2	M.Sc.I			BO I.1: Instrumentation and Biostatistics

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	Unit-I: Plant Water Relations (14 L)	1. Importance of water in plant life, 2. Different bio-physico-chemical phenomenon-Permeability and its importance. Definition of diffusion, osmosis plasmolysis, imbibition. 3. Absorption of water- Introduction, mechanism of water absorption 4 . Ascent of sap- Definition, mechanism of root pressure theory, capillary theory, imbibition and transpiration pull theories. 5. Transpiration- Definition, types, structure of stomata, mechanism of opening and closing of stomata	23/06/19 to 18 /07/ 19	02 02 02 02 02 04	Regist. of Students For NPTEL of Related Topic	Unit Test – I 19.07.2018
02	Unit-II: Plant Growth And	I. Vegetative Growth: 1.Seed dormancy: Seed dormancy-Introduction, methods of breaking seed dormancy, factors affecting seed dormancy 2. Seed germination:: Seed germination-		02 02	Listening Lectures	Activity Based Test 8-8-18

Development (10 L)	types, factors affecting seed germination. 3. Plant growth hormones: Auxins, gibberellins, cytokinins, abscisic acid, Ethylene II. Reproductive Growth: Physiology of flowering: Photoperiodism	19-07-19 to 16-08-19	04 02	Solving Online Assignment	TO 14-08-18
03 Unit-III: Photosynthesis And Photorespiration (13 L):	I. Introduction , ultra structure of chloroplast, biogenesis of chloroplast, photosynthetic pigments, concepts of two Photo systems. II. Mechanism of photosynthesis: 1. Light phase- Hill reaction, Cyclic and Non cyclic photophosphorylation. 2. Dark phase- Calvin cycle (C3 pathway), Hatch and Slack cycle (C4 pathway) and Crassulacean acid metabolism (CAM), significance of photosynthesis; III. Photorespiration: Introduction, Glycolate metabolism (C2 cycle) significance.	17-08-19 TO 14-09-19	02 02 02 05 02	Listening Lectures Preparation of charts	Internal Test 18-09-2019 To 25-09-19
04 Unit-IV: Respiration (10 L)	I. Introduction , ultra structure of mitochondria, respiratory quotient and its significance; II. Types of respiration: 1. Aerobic respiration- Glycolysis, Krebs's cycle, Electron Transport System (oxidative phosphorylation), ATP structure and function. 2. Anaerobic respiration- Fermentation (alcoholic and lactic acid) significance of respiration.	26-09-19 TO 22-10-19	02 06 02	Poster Presentation Competition	

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M. Sc. I Instrumentation and Biostatistics

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	Credit: I Microscopy-I (18)	1. Microscopy: Introduction, Principle and working of the light microscope, Compound microscope, Stereo microscope, Phase contrast microscope, TEM, SEM, (image processing method and staining technique) and Flow cytometry. 2. Spectroscopy: UV visible and IR spectrophotometry, NMR & mass spectrometry.	. 04-07- 19 to 04-08- 2019	03 03 04 04 02 02		Screening Test
2	Credit-II: Separation Techniques (16)	Separation Techniques: Centrifugation: Basic principles of centrifugation, types, care and safety aspects of centrifuges, preparative and analytical centrifugation. 2. Chromatographic Techniques: Principles, paper, thin layer chromatography (TLC), HPLC, GC. 3. Electrophoretic Techniques: General principles Support media, Electrophoresis of Proteins (SDS PAGE) and nucleic acids (PAGE), Agarose Gel electrophoresis. 4. Culture Techniques: Principles, types (bacterial, fungal) media preparation,	05-08- 19 to 03-09- 2019	03 06 04	Online Lectures For students	Activity based test 10-8-19 to 17-8-19

		Sterilization and Inoculation.		03		
3	Credit-III: Computers in Biology (15L)	Biochemistry Laboratory: Laboratory discipline, safety and care, experimental report. SI unit, pH and Buffers. 2. Microtomy: Principle of tissue fixation for microtomy, types of microtome, serial sectioning and staining. 3. Radioactive Techniques: Isotopes and their half-life and biological half-life. Specific activity of radioisotopes, making radioisotope solutions.	04-09-19 to 27-09-19	02 04 03 06	Gust Lecture, Short, Excursion	MCQ Test 04-09-2018
4	Credit IV: Biostatistics (15L)	1. Computers in Biology: Modern computers, its use in Biological science, Internet. 2. Biostatistics : 1. Measures of central tendency and dispersal; 2. probability distributions (Binomial, Poisson and normal). 3. Regression and Correlation; t-test; Analysis of variance; χ^2 test.	28-09-19 to 17-10-19	03 01 03 02 03 03	Quiz Contest	Internal Test 18-09-2019 To 25-09-19


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Sr. No.	Class	Name of Asst. Prof.	Subject	Paper
1	B.Sc.III	DR.K.D.SAVANT	Botany	XI Biochemistry and Bioinformatics
2	M.Sc.II			BO 4.1: Cytogenetics and Plant Breeding

Summary of Lesson Plan Course: **XI Biochemistry and Bioinformatics**
Name of Teacher: **DR.K.D.SAVANT** Class: **B.Sc.III (SIXTH 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	UNIT -I: BASIC BIOCHEMISTRY (12 L):	1.Introduction of different organic constituents of the cell; 2.Introduction and Biological functions of : i. Carbohydrates ii. Lipids iii. Proteins iv. Nucleic acids 3. Importance of essential oils, resins, tannins, alkaloids, organic acids, gums and mucilage.	09 Dec 19 to 31 Dec 19	02 02 02 02 02 02	NPTEL REGIST. OF RELATED TOPIC	Unit Test – I 30.12.2019
	UNIT -II: MINERAL	1. Essential elements: Major elements (macro nutrients), trace elements (micro		02		

02	NUTRITION (11L)	nutrients), 2. Physiological role of essential elements (functions and deficiency symptoms). phytosedrophores 3. Mineral salt absorption: Introduction, mechanism of passive absorption (ion exchange theory), active absorption 4. Translocation of organic solutes: Introduction, direction of translocation, mechanism of translocation (Munch hypothesis, protoplasmic streaming theory)	1 st JAN 2020 to 28 JAN 2020	03	Listening Lectures SOLVING ONLINE ASSIGNMENT	Unit – II Chapter 1 & 2: Activity based Test 27.1.2020 Assignment
03	UNIT – III: ENZYMOLOGY (11 L):	1. Introduction, nomenclature and classification (IUB). 2. Properties of enzymes. 3. Mechanism of mode of enzyme action 4. Factors affecting enzyme activity 5. Concept of holoenzyme, apoenzyme, co-enzymes and co-factors. 6. Abzyme 7. Ribozyme	29-01-2020 to 27-02-2020	02 02 01 01 02 02 01	Listening Lectures SOLVING ONLINE ASSIGNMENT	Internal Test 27.02.2020 to 5-3-2020
04	UNIT – IV BIOINFORMATICS (12L):	1. Introduction 2. History 3. Biological Databases i. protein databases ii. Nucleic acid databases 4. Bioinformatics applications	6 MAR 2020 to 31 MAR 2020	02 02 02 02 04	Quiz Competition	Unit – IV Assignment

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2	M.Sc.II			BO 4.1: Cytogenetics and Plant Breeding

Summary of Lesson Plan

BO 4.1: Cytogenetics and Plant Breeding

Name of Teacher: DR.K.D.SAVANT

Class: M.Sc.II (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	Credit: I Cytogenetics-I (18)	1.Cell division: Mitosis and Meiosis. 2.Concept of Gene: 3. MendelianPrinciples 4. Extensions of MendelianPrinciples: 5. Extra chromosomal inheritance: 6. Quantitative genetics-.	04 /12/ 18 to 05 /01/ 2019	03 03 04 04 02 02	Woolen Models	Credit I: Cytogenetics-I Assignment 01 Jan 2019
2	Credit II: Cytogenetics-II (16)	Credit II: Cytogenetics-II (15L) 1. Microbial genetics: Mapping of bacterial genome by interrupted mating. 2. Mutation: 3. Linkage and mapping in eukaryotes:	06 /01/19 To 04 /02/19	03 03 02 02	Online Lectures For students	Activity based test

		4. Karyotypes and genetic disorders. 5. Structural alterations of chromosomes: 6. Numerical alterations of chromosomes:		03 03		
3	Credit III: Plant Breeding-I(14L)	1. Plant Breeding- Objectives, Plant Genetic resources and their conservation: 2. Breeding methods in self pollinated crops: 3. Breeding methods in Cross pollinated. 4. Breeding methods in clonally propagated crops:	05 /02/19 To 03 /03/19	05 04 03 02	Short Excursion	MCQ Test 04-03-2018
4	Credit IV: Plant Breeding-II(15L)	1. Hybridization methods in plants. 2. Heterosis breeding. 3. Mutation breeding: 4. Role of polyploidy in plant breeding. 5. Breeding for biotic and abiotic stress resist 6. Release of new variety, seed production and maintenance.	04 Mar 19 To 30 Mar 19	02 02 03 02 03 03	Quiz Contest	


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