

**Rajarshi Shahu Mahavidyalaya, Latur**

**( Autonomous )**

**Structured Work Plan for Teaching**

**(June – 2020 to December 2020)**

**1. Details of Classes to be taught**

<b>Sr. No.</b>	<b>Class</b>	<b>Name of Asstt. Prof.</b>	<b>Subject</b>	<b>Paper</b>
1	B.Voc. FPT II	Miss. Swati G. Swami	Food Processing And Technology	<b>Course Title:</b> Introduction to Cereal and Legume Processing. <b>Course Code:</b> U-ICL-422
2	B. Voc FPT III			<b>Course Title:</b> Food and beverage processing. <b>Course Code:</b> U-FBP-654
3	BSc BT I		Biotechnology	<b>Course Title:</b> Chemistry For Biologist. <b>Course code:</b> U- CBF- 190

# 1) Summary of Lesson Plan

Name of Teacher: Miss. Swati G. Swami

Class: B.Voc. II (Third 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	<b>Introduction to Cereal and Legume Processing</b>	<b>Unit 1</b> <ul style="list-style-type: none"> <li>• Present status and future prospects of cereals and millets;</li> <li>• Morphology: physicochemical properties; chemical composition and nutritive value Rice</li> <li>• Paddy processing and rice milling: conventional milling, modern milling, milling operations, milling machines, milling efficiency, byproducts of rice milling.</li> <li>• Quality characteristics influencing final milled products.</li> <li>• Parboiling: rice bran stabilization and its methods; Aging of rice;</li> <li>• Enrichment – need, methods processed foods from rice – breakfast cereals, flakes, puffing, canning and instant rice.</li> <li>• Wheat: break system, purification system and reduction system; extraction rate and its effect on flour composition</li> </ul>	06- July 2020 To 29Aug. 2020	03	Group Discussion	1)Class test on unit I: <b>17 July 2020</b>
		<b>Unit II</b>				

		<ul style="list-style-type: none"> <li>• Quality characteristics of flour and their suitability for baking.</li> <li>• Barley: Malting and milling</li> <li>• Sorghum: milling, Malting, Pearling and industrial utilization</li> <li>• Millets: Importance of Millet, composition, processing of millets for food uses, major and minor millets Products.</li> </ul>	30 Aug. 2020 to 27 Sept. 2020			
		<p><b>Unit III:</b></p> <ul style="list-style-type: none"> <li>• Present status and future prospects of legumes and oilseeds;</li> <li>• Morphology of legumes and oilseeds;</li> <li>• Classification and types of legumes and oilseeds,</li> <li>• Antinutritional compounds in legumes and oilseeds;</li> <li>• Methods of removal of antinutritional compounds,</li> <li>• Milling of legumes: home scale, cottage scale and modern milling methods, milling quality,</li> <li>• Efficiency and factors affecting milling;</li> <li>• problems in dhal milling industry, Soaking and germination of pulses.</li> </ul>	28 Sept. 2020 to 8 Oct. 2020			

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	Food and beverage processing	<b>Unit I:</b> <b>Introduction to different food beverage</b> <ul style="list-style-type: none"> <li>• Theory History, importance of beverages, status of beverage industry in India,</li> <li>• Need of particular beverage, Raw materials used for beverages,</li> <li>• Food additives used in different beverages,</li> <li>• Types of beverages, Packaged drinking water, juice-based beverages, Synthetic, still, carbonated,</li> <li>• low-calorie and dry beverages, isotonic and sports drinks, dairy based,</li> <li>• alcoholic beverages fruit beverages.</li> </ul>	10 July 2020 To 30 Aug. 2020	4	Group Discussion	Class Test on unit 1: <b>5 Aug. 2020</b>
		<b>Unit II:</b> <ul style="list-style-type: none"> <li>• Definition, Types (ale, lager), manufacture and quality evaluation,</li> <li>• Role of yeast in alcoholic beverages,</li> </ul>	31 Aug. 2020 to 10 Oct. 2020	2 2 2 3 2	Quiz Competition	

		<ul style="list-style-type: none"> <li>• Technology of brewing process, equipment's used for brewing and distillation,</li> <li>• wine and related beverages, distilled spirits</li> <li>• Principle and method for production of mineral water,</li> <li>• Types of water, Quality standard (BIS) of water.</li> </ul>				
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Name of Teacher: Miss. Swati G. Swami

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	<b>Chemistry For Biologist</b>	<b>Unit I:</b> <ul style="list-style-type: none"> <li>• Chemical bonding- various theories (Valence bond theory and Valence Shell Electron Pair Repulsion (VSEPR) theory),</li> <li>• Type of Chemical bonds,</li> <li>• Acids &amp; Bases,</li> <li>• Buffer solutions, solubility products,</li> <li>• Ways of expressing concentrations of solution- (Molarity,</li> </ul>	14 Oct. 2020 To 12 Dec. 2020	3  2 2 3  3	Group Discussion  Surprise Test  Seminar	1)Daily Assignments on Google classroom      2)Class test on Unit I: 18 Dec. 2020

	<p>Normality, Molality, Formality),</p> <ul style="list-style-type: none"> <li>• Colligative properties- Lowering of vapour pressure, Osmosis and osmotic pressure, Elevation in boiling point, Depression in freezing point.</li> </ul>		3		3)Class test on Unit I and II: 28 Jan. 2021
	<p><b>Unit II:</b></p> <ul style="list-style-type: none"> <li>• Basics in organic chemistry- Tetravalency of Carbon, Hybridization, Substrates &amp; Reagents,</li> <li>• Bond fission,</li> <li>• Types of Reagents, Reactive intermediates- Carbocation, Carbanion, Free radicals,</li> <li>• Types of organic reactions- Substitution, Addition, Elimination, Rearrangement reactions,</li> <li>• Oxidation reactions of carbohydrates,</li> <li>• Osazone formation reaction, Ruff degradation, KilianiFischer synthesis.</li> </ul>	16-12-2020 to 13-1-2021	3 2 2 2 2 2		
	<p><b>Unit III:</b></p> <ul style="list-style-type: none"> <li>• Reaction Kinetics: Rate constant, Order of reaction &amp; Molecularity of reactions,</li> <li>• Activation Energy, Zero, First &amp; Second order kinetics,</li> <li>• Catalysis &amp; enzyme catalysis for elementary reactions.</li> <li>• Thermodynamics: Recapulation of</li> </ul>	15-01-2021 to 6-02-2021	2 2 2 2		

		definition & terms involved in thermodynamics, <ul style="list-style-type: none"> <li>• Laws of thermodynamics, Hess law, Heat of formations,</li> <li>• Free energy, work function &amp; Kirchhoff's equations.</li> </ul>		2		
		<b>Unit IV:</b> <ul style="list-style-type: none"> <li>• Isomerism and its types- Optical &amp; Geometrical isomerism,</li> <li>• Representation of molecules Fischer Projection formulae,</li> <li>• Sawhorse Projection, Newman &amp; Flying &amp; Wedge model.</li> <li>• Definition of spectroscopy, Electromagnetic spectrum &amp; its characterization (frequency, wavelength, Wave number),</li> <li>• Principle &amp; applications of various spectroscopic techniques.</li> </ul>	10-02-2021 to 20-02-2021	3		
				2		
				3		
				2		
				2		

**Rajarshi Shahu Mahavidyalaya, Latur**

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**Structured Work Plan for Teaching**

**(Summer 2020-2021)**

**1. Details of Classes to be taught**

<b>Sr. No.</b>	<b>Class</b>	<b>Name of Asstt. Prof.</b>	<b>Subject</b>	<b>Paper</b>
1	BSc BT I	Miss. Swati G. Swami	Biotechnology	<b>Course Title:</b> Fundamentals of Biological Chemistry <b>Course Code:</b> U-FUB-289 <b>Course Title:</b> Lab Course VII <b>Course Code:</b> U-LAC-193
2	M. Sc I			<b>Course Title:</b> Bioinstrumentation and Biostatistics <b>Course Code:</b> P-LAC-141 <b>Course Title:</b> Animal biotechnology <b>Course Code:</b> P-LAC-238
3	B. Voc FPT II		Food Processing And Technology	<b>Course Title:</b> Introductory Biotechnology (General Education) <b>Course code:</b>



# 1) Summary of Lesson Plan

Name of Teacher: Miss. Swati G. Swami

Class: B.Sc BT (Second Semester)

Sr. No.	Subject	Unit and Chapter to be covered	No. of Lectures	Date	Academic activities to be organized	No. of Test / Assignment
1	Fundamentals of Biological Chemistry	<b>Unit 1</b> <ul style="list-style-type: none"> <li>Structure of atom, Molecules, weak interaction stabilizing biomolecules,</li> <li>Henderson- Hasselbach equation pH, pK, buffers, and thermodynamics principles.</li> <li>Carbohydrates: Introduction, biological importance. Definition, Classification, Monosaccharides other than glucose,</li> <li>glycosidic bond, disaccharides, polysaccharides [starch, glycogen],</li> </ul>	2	10 March	Group Discussion	1)Class test on unit I:
		<b>Unit II</b> <ul style="list-style-type: none"> <li>Lipids: Introduction, Classes, Fatty acids [Physical properties. Chemical properties,</li> <li>Saponification value, acid value, iodine number, rancidity]. Glycerolipid, Sphingolipid.</li> <li>Nucleic acids: Nucleosides, nucleotides, Polynucleotide,</li> <li>DNA and its different forms [A, B, C, D, E and Z], RNA and its types. Forces stabilizing nucleic acid structure.</li> </ul>	2	27 March 2021	Surprise test	2)Class test on Unit II:
			3			3)Quiz competition.
			3	30 March 2021	Quiz competition	
			3	To 17 April 2021		

		<b>Unit III:</b> <ul style="list-style-type: none"> <li>• Amino acids: Structure and / classification.</li> <li>• Properties of amino acids, Acid base behaviour/ /colour reactions/Zwitterions.</li> <li>• Protein structure: Classification, Conformation of proteins (primary, secondary, super secondary, quaternary domains)</li> <li>• Peptide bond. Biological function of protein.</li> </ul>	3 4 4 4	21 April 2021 To 12 May 2021		
		<b>Unit IV:</b> <ul style="list-style-type: none"> <li>• Enzymes: Basic concept, active site, energy of activation.</li> <li>• Lock and key hypothesis, induced fit hypothesis.</li> <li>• Co-enzymes: Niacin, Folic acid, Cynocobalamine.</li> </ul>	2 3 2 3	13 May 2021 To 31 May 2021		

Sr. No.	Subject	Practical's	Date	No. of Practical's
1	Chemistry for Biologist	Safety Measures in Laboratory, care of Glassware, Handling of Instruments	15 March to 25 May 2021	04
2		Preparation of Standard Solutions, Molar, Normal Percent, Buffer Preparations		04
3		Determination of pKa of weak acid(Acetic acid / Amino acid ) by pH metry		04

4		Preparation of Standard Solution of $K_2Cr_2O_7$ and standardization of given $FeSO_4$ solution.		04
5		Determine the Strength and Normality of an acid.		04
6		Steam Distillation		04
7		Column Chromatography		04
1	Fundamentals of Biological Chemistry	Qualitative test for carbohydrates		04
2		Estimation of reducing sugars by Benedict's Method		04
3		Estimation of Amino acids		04
4		Sugar estimation by DNSA, Anthrone Method		04
5		DNA estimation by DPA Method		04
6		Protein estimation		04

Name of Teacher: Miss. Swati G. Swami

Class: M. Sc BT (first & Second Semester)

Sr. No.	Subject	Practical's	Date	No. of Practical's
1	Bioinstrumentation and Biostatistics	TLC, Paper Chromatography	01 March to 25 May 2021	02
2		Practical based on centrifugation		02
3		Practical based on spectroscopy		02
4		Separation of proteins/ pigments using column/ Affinity chromatography.		02
5		Study of Lambert and beer's law		02
6		Problems based on Spectroscopy		02
7		Problems based on biostatistics.		02
1	Animal biotechnology	Packing and sterilization of glass and plastic wares for cell culture.		02
2		Preparation of reagents and media for cell culture.		02
3		Primary culture technique for chicken embryo fibroblast.		02
4		Secondary culture of chicken embryo fibroblast.		02
5		Cultivation of continuous cell lines		02
6		Quantification of cells by trepan blue exclusion dye.		02



		<ul style="list-style-type: none"> <li>• Reproduction in Plant:</li> <li>• Structure of Flower A</li> <li>• Sexual reproduction in plant</li> </ul>		2 2 2		
		<b>Unit IV: Life processes in animals</b> <ul style="list-style-type: none"> <li>• Animal Nutrition,</li> <li>• Transport in humans- Circulatory system,</li> <li>• structure and functions, Respiration,</li> <li>• Types, Excretion in animals,</li> <li>• Co-ordination and response,</li> <li>• Sexual reproduction in humans.</li> </ul>	12 May 2021  To  31 May 2021	3 3 3 3 3 3		

**Miss. S. G. Swami**

**Name of Lecturer**

**Signature**