Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Structured Work Plan for Teaching

(June – 2019 to March . 2019)

Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Sc.II	Laxman N. Bavkar	B. Voc (Food Processing Technology)	**Course Title: Fundamental of Food and Nutrition** **Course Code :** **Course Title:** **Course Code:**

1. **Summary of Lesson Plan**

Name of Teacher: Mr. Bavkar Laxman Nagnath **Class : B.Voc. (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	Fundamental of Food and Neutrition	**Unit1** 1.Introduction to Nutrition, Defination of nutrition, nutrients 2.RDA-Relation of nutrition and Health-Classification of nutrients (Major, minor) 3.Carbohydrate composition, sources, Classifications-functions 4.RDA-Deficiency, excess	08-07-19 To 15-07-19	04 04 04 02	Classroom Group Discussion	Unit – I 25/07/19 Unit – II 13/08/19 Unit – III 22/08/19 Unit– IV 19/09/19
		Unit II 1.Proteins-Composition,Sources 2.Classifications of proteins and Sources, RDA-Deficiency, excess 4.Fats-Composition,Sources	15-07-19 To	04 05 03		

		5.Classification-Functions,RDA-Deficiency, excess	07-08-19	03		
		Unit III 1.Vitamins introduction 2.Classification- Fat soluble vitamins-Composition, Sources, Functions, RDA-Deficiency, excess 3.Water soluble vitamins-Composition, sources, Functions, RDA- Deficiency, excess	07-08-19 To 05-09-19	02 06 07		
		Unit IV **1.**Minerals-Composition,Sources,Classification-Functions,RDA-defeciency,excess 2.Water-Composition,Sources,Classification-Functions,RDA-Defeciency,excess 3.Effect of processing on nutrients-Food processing and nutritional security	05-09-19 To 10-10-19	05 06 04		

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Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Sc.II	Laxman N. Bavkar	B. Sc (Biotechnology) Semester-3	**Course Title: Metabolism** **Course Code : U-LAC-412**

1. **Summary of Lesson Plan**

Name of Teacher: Mr. Bavkar Laxman Nagnath **Class : B.Sc. BT. II (Third Semester)**

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	Metabolism	Preparation of list of practicals	08/07/19 To 24/10/19 Batch A	01
2		Qualitative Test for Amino Acids		01
3		Qualitative Test for Proteins		01
4		To Perform Fatty acid Titration		01
5		Estimation of Ketone Bodies		01
6		Determination of Urinary Titrable acidity		01
7		Estimation of Urinary Creatinine		01
8		Estimation of Enzyme activity of Acid Phosphatase		01
9		Estimation of Enzyme activity of β-amylase		01
10		Estimation of Total Serum Cholesterol by Zak and Henley's method		01
11		Determination of Serum Bilirubin by Van de Bergh reaction		01
12		Solution of Problems in Biochemistry and Metabolism		01

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Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Sc.II	Laxman N. Bavkar	B. Sc (Biotechnology) Semester-3	**Course Title:** Skill Enhancement Course **Course Code :** U-GLP-293 **Course Title:** **Course Code:**

Summary of Lesson Plan

Name of Teacher: Mr. Bavkar Laxman Nagnath **Class : B.Sc. BT. II (Third Semester**

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	Skill Enhancement Course (Good Laboratory Practices)	Standard Operating Procedures	07/07/19 To 24/10/19 Batch B Batch C Batch D	03
2		Preparation of Standard Solution and Buffers		03
3		Demo and Maintenance of Internal and External Audit		03
4		Calibration of Instruments: PH meter,colorimeter,spectrophotometer,water bath, Distillation assembly, Burette, Pipette etc.		03
5		Use of Microsoft world, Excel. (for Data entry, calculation and graphical representation)		03
6		Use of internet and emails		03

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Structured Work Plan for Teaching

(June – 2019 to March . 2019)

Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Sc.II	Laxman N. Bavkar	B. Sc (Biotechnology) Semester-3	**Course Title:** Skill Enhancement Cource **Course Code :** U-GLP-293 **Course Title:** **Course Code:**

Summary of Lesson Plan

Name of Teacher: Mr. Bavkar Laxman Nagnath **Class : B.Voc. (Third Semester)**

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	Fundamental of Food and Nutrition	Preparation of list of nutrient rich food sources (vitamins, minerals, water)	09/07/19 To 24/10/19	01
2		Preparation of vitamin A rich product with calculation of nutritive value		01
3		Preparation of vitamin B1 rich product with calculation of nutritive value		01
4		Preparation of vitamin B2 rich product with calculation of nutritive value		01
5		Preparation of vitamin B3 rich product from animal source with calculation of nutritive value		01
6		Preparation of vitamin C rich product with calculation of nutritive value		01
7		Preparation of high mineral product (iron and calcium) with calculation of nutritive value		01
8		Preparation of high water containing product with calculation of nutritive value		01

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Structured Work Plan for Teaching

(June – 2019 to March . 2019)

Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Sc. II	Laxman N. Bavkar	M.Sc Biotechnology	**Course Title:** Bioinstrumentation and Biostatistics **Course Code :** P-LAC-141

Summary of lesson plan

Name of Teacher: Mr.Bavkar Laxman Bavkar **Class : M.Sc. BT. (First Semester)**

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	Bioinstrumentation and Biostatistics	Practical's Based on Microscopy	08/07/190 to 24/10/19 Batch A Batch B	02
2		Practical's based on centrifugation		02
3		Practical's Based on Electrochemical Techniques		02
4		TLC , Paper Chromatography		02
5		Separation of proteins / pigments using column/Affinity chromatography		02
6		Demonstration of techniques : gas chromatography high performance liquid Chromatography HPLC		02
7		Electrophoresis Of DNA		02
8		Electrophoresis of proteins under native and denaturing conditions (PAGE)		02
9		To find out isoelectric point of amino acid		02
10		Western blotting		02
11		ELISA		02
12		Study of Lambert's & Beer's law		02
13		Absorption spectrum of protein		02
14		Problems based on Spectroscopy		02
15		Problems based on Radioactivity		02
16		Problems based on Biostatistics		02

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Structured Work Plan for Teaching

(Dec. – 2019 to March 2020)

Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Sc. I	Dr. Laxman Bavkar	Biotechnology	**Course Title: Fundamentals of Biological Chemistry** **Course Code : U-FUB-289** **Course Title: Lab Course VIII** **Course Code: U-LAC-294**
2	B.Sc. II Year	Dr. Laxman Bavkar	Biotechnology	**Course title : Lab Course XIII** **Course Code: U-LAC-502** **Course Title: Enzymology**
3	B.Sc. II Year	Dr. Laxman Bavkar	Biotechnology	**Course Title: Lab Course XIII** **Course Code: U-ADC-434** **Course Title: Algal Cultivation Technology Course Code: U-ADC-434**
4	M Sc I year	Dr. Laxman Bavkar	Biotechnology	**Course Title: Lab course V** **Course Code: P-LAC-236** **Course Title: Molecular Biology**

1. **Summary of Lesson Plan**

Name of Teacher: Manisha A. Dhotre **Class : B.Sc. BT. 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	Fundamentals of Biological Chemistry	**Unit I** • Structure of atom, Molecules • weak interaction stabilizing biomolecules • Henderson- Hasselbach equation • pH, pK, buffers • thermodynamics principles • Carbohydrates: Introduction • biological importance • Definition, Classification • Monosaccharides other than glucose • glyocosidic bond,	10-12-19 To 03-01-20	02 02 02 01 01 01	Classroom Group	Unit – I 09/01/20 Unit – II 16/02/20 Unit – III 26/03/20

		disaccharides • polysaccharides		02	Discussion	
		Unit II. **Lipids:** Introduction • Classes • Fatty acids [Physical properties Chemical properties • Saponification value, acid value, iodine number, rancidity. • Glycerolipid, Sphingolipid. **Nucleic acids:** • Nucleosides, nucleotides,Polynucleotide • DNA and its different forms [A, B, C, D, E and Z] • RNA and its types • Forces stabilizing nucleic acid structure	04-01-20 To 22-01-20	02 02 01 01 02 01 01		
		Unit III • **Amino acids:** Structure and / classification • Properties of amino acids, Acid base behavior, • colour reactions/Zwitterions. • **Protein structure:** Classification • Conformation of proteins (primary, secondary, super secondary, quaternary domains) • Peptide bond. Biological function of protein.	23-01-20 To 10-02-20	02 01 01 02 03 01		
		Unit IV • **Enzymes:** Basic concept, • active site, energy of activation. • Lock and key hypothesis, induced fit hypothesis. • Co-enzymes: Niacin, Folic acid,	11-02-20 To 25-03-20	02 03 03 02		

		Cynocobalamine.				

Name of Teacher: Dr. Laxman N. Bavkar **Class : B.Sc. BT. I (Second Semester)**

Sr. No.	Subject	Practical's	Date	No. of Practical's
1	Fundamentals of Biological Chemistry	Preparation of solutions, buffer sensitivity, specificity accuracy, Molarities, molality, normality	16/12/19 to 31/03/20	03
2		Qualitative test for carbohydrates		03
3		Estimation of reducing sugars by Benedicts Method		03
4		Spot tests for Amino Acids		03
5		Estimation of Amino Acids		03
6		Protein Estimation		03
7		Saponification of Fats		03
8		Estimation of Cholesterol		03
9		Sugar estimation by DNSA ,Anthrone method		03
10		DNA estimation by DPA Method		03

Name of Teacher: Dr. Laxman N. Bavkar **Class : B.Sc. BT. II (Fourth Semester)**

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	Enzymology	To study effect of α amylase activity on starch	16/12/19 To 31/03/20 Batch C,D,E	03
2		Determination of α amylase activity		03
3		To study effect of pH on α amylase activity		03
4		To study effect of Substrate on α amylase activity		03
5		To study effect of Salt on α amylase activity		03
6		To study effect of Temperature α amylase activity		03
7		To study effect of Time on α amylase activity		03
8		A] Immobilization of Yeast cells by Calcium-Alginate Entrapment method B] Determination of viability of immobilized Cells by invertase activity		03
9		Hydrolysis of sucrose by yeast β-Fructofuranosidase		03
10		Determination of Hydrolyzed Sucrose solution by Benedict Method		03

11		Indirect Estimation of Lactate Dehydrogenase		03
12		A] Purification of HRP by Affinity Chromatography B] Estimation of HRP activity		03
13		Problems Based on MM equation and Lineweaver-Burk plot		03

Name of Teacher: Dr. Laxman N. Bavkar **Class : B.Sc. BT. II (Fourth Semester)**

Sr. No.	Subject	Practical's	Date	No. of Practical's
1	Algal Cultivation Technology	**Theory:** Introduction to Algae, Life cycle of Algae, Role Algae in Ecosystem. **Practical:** 1. Collection & Microscopic observation of algae. 2. Quantification of collected algae.	16/12/19 To 31/03/20	02
2		**Theory:** Techniques for cultivation of Algae in laboratory, seed culture & its maintenance. Designing of photo bioreactor and Raceway Ponds for algal cultivation & its application. **Practical:** 1.Isolation, Identification of economic important algae. 2.Inoculam development pilot scale production		02
3		**Theory:** Algal Biotechnology – potential of microalgae for SCP, carotene, Biofertilizer, Biodiesel; Principles of mass cultivation of microalgae and its Economic Importance. **Practical:** 1. Qualitative estimation of protein from algae. 2. Chromatographic separation of essential biomolecules from algae.		02
4		**Theory** Business economics for algal cultivation, production and processing and Futuristic Approaches in algal biotechnology. **Practical** 1Visit to industry actively engaged in algal technology. 2. Project report on algal technology. 3. Study of Spirulina production and its products		02