Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Structured Work Plan for Teaching

(June – 2019 to March . 2019)

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

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Voc. I	Miss. Swati G. Swami	Food Processing	**Course Title: Introductory Food Microbiology** **Course Code : U-IFP** **Course Title: Lab Course**
2	B. Voc II			**Course Title: Food Preservation techniques** **Course Title: Lab Course**
3	BSc II		Biotechnology	**Course Title: Lab Course IX** **Course code: U-LAC-402**
4	BSc III			**Course Title: Lab Course** **Course code: U-SEC**

2. **Summary of Lesson Plan**

Name of Teacher: Miss. Swati G. Swami **Class: B.Voc. 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	**Introductory Food Microbiology**	**Unit 1** 1.Importance and		02		Unit – I 27.07.2019 Unit – II

		5. General provisions as to articles of food, special responsibility as to safety of food, 6. analysis of food offences of penalties.		01		
		Unit IV 1. Principles and steps of HACCP Plan, 2. Hazard Identification, 3. Risk assessment Risk communication with communication agencies 4. Hazard analysis, 5. CCP Decision Tree 6 HACCP Plan.	23-02-20 To 25-03-20	02 01 03 02 02 02	Classroom Seminar Group Discussion	

Name of Teacher: Miss. Swati G. Swami

Class: B.VocII (Fourth Semester)

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	**Quality Control and Regulations**	Determination of Moisture content of food	16/12/19 to 31/03/20	01
2		Determination of Fat content of food		01
3		Determination of protein content of food		01
4		Determination of crude fiber content of food		01
5		Determination of ash content of food		01
6		Determination of Total Plate Count		01
7		Determination of Yeast and Mould Count		01
8		To conduct Hazard Analysis & Risk Assessment of identified hazards		01
9		Determination of CCP through CCP Decision Tree		01
10		Visit to quality control laboratory		01

Name of Teacher: Miss. Swati G. Swami

Class: B.Sc II (Fourth Semester)

		Microbiology of milk and milk products, meat and meat products, poultry and eggs, fish and other sea foods Microbiology of fruits and vegetables and canned foods Microbiology of sugar and sugar products and salts and spices .		02 02		
		Unit III **1.**Shelf life: Calculation of shelf life, Shelf life requirements, deteriorative reactions, accelerated testing **2.**Simulations of product: Package environment interaction, shelf life simulation for moisture, oxygen, and light sensitive products. **3.**Reverse osmosis, Electro dialysis, Ultra-filtration, High pressure processing, Super critical fluid extraction.	14-08-19 To 04-09-19	03 02 02 03	One Min. Paper. Group Discussio n	
		Unit IV **1.**Food borne intoxications and infections, types of	06-09-19 To	02	Classroom Seminar	

		Unit III 1. Fats: Sources and physico chemical and functional properties; 2. PUFA [Polyunsaturated Fatty Acids] hydrogenation and rancidity; 3. Saponification number, iodine value, Reichert-Meissl number, Polenske value; 4. Lipids of biological importance like cholesterol and phospholipids. 5. Digestion & absorption of lipids.	27-01-20 To 22-02-20	03 02 02 03	One Min. Paper. Group Discussion	
		Unit IV 1. Minerals and Vitamins: Sources and structures of minerals & vitamins; 2. Effect of processing and storage of vitamins; 3. Pro vitamins A & D; Vitamins as antioxidants. Food Pigments & Flavouring Agents: 4. Importance, types and sources of pigments – their changes during processing and storages. 5. Introduction to human nutrition; Nutritive values of foods; Basal metabolic rate; 6. Techniques for assessment of human nutrition, Dietary requirements and deficiency diseases of different nutrients.	23-02-20 To 25-03-20	02 02 02 03 02 02 02	Classroom Seminar Group Discussion	

Name of Teacher: Miss. Swati G. Swami **Class: B.VocII**
(Fourth Semester)

8		Microbial examination of sugar, salts and spices.	27-08-19	01

Name of Teacher: Miss. Swati G. Swami **Class: B.VocII (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	**Food Preservation techniques.**	**Unit I** **1. Fundamentals of food Preservation:** Concept, Importance of food preservation, Principles of food preservation. **2. Microorganisms in food:** Introduction, types of microorganisms, Conditions for growth, Food spoilage and their control.	10-07-19 To 19-07-19	03 02	Classroom Seminar Group Discussion	Unit – I 22.07.2019 Unit – II 01.08.2019 UNIT III Assignment
		Unit II **1. Preservation by preservatives:** Concept and definition, Types, Natural preservatives, Synthetic preservatives. **2. Irradiation:**	24-07-19 To 08-08-19	03 02 01	One Min. Paper. Group Discussion	

Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Structured Work Plan for Teaching

(Dec. – 2019 to March 2020)

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

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Voc. I	Miss. Swati G. Swami	Food Processing And Technology	**Course Title: Food Biochemistry** **Course Code : U-FOB-312**
2	B.Voc II			**Course Title: Quality Control and Regulations** **Course Title: U-QCR-519** **Course Code: U-LAC-522**
3	BSc II		Biotechnology	**Course Title: Lab Course XV** **Course code: U-LAC**
4	BSc III			**Course Title: Biofertilizer II** **Course code: U-SEC**

1) **Summary of Lesson Plan**

Name of Teacher: Miss. Swati G. Swami

Class: B.VocII
(Third Semester)

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	**Food Preservation techniques.**	Identification of lab equipment.	08.07.2019	01
2		Identification of class I and class II preservatives.	15.07.2019	01
3		Identification of spoiled food.	22.07.2019	01
4		Preparation of product by using salt as preservative (any 2).	29.07.2019	01
5		Preparation of product by using Sugar as preservative (any 2).	05.08.2019	01
6		Preparation of product by using oil as preservative (any 2).	12.08.2019	01
7		Preparation of product by using Chemical preservative (any 2).	19.08.2019	01
8		Visit to the food preservation unit.	26.08.2019	01
9		Visit to the Irradiation unit.	02.09.2019	01
10		Introduction to drying equipment.	09.09.2019	01
11		Drying of fruits ,vegetable, seeds (any 2)	16.09.2019	01
12		Visit to cold storage unit.	07.10.2019	01
13		Visit to Observe modern techniques of food preservation/ drying unit.	14.10.2019	01

Name of Teacher: Miss. Swati G. Swami **Class: B.Sc II**
(Third Semester)

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	Applied Microbiology.	Isolation and enumeration of microbes from 1. Soil 2. water 3 Food samples	08.07.2019 To 14.10.2019	03
2		Isolation of cellulose degraders		03
3		Isolation of 1. Rhizobium 2. Azatobactor		03
4		Isolation of microbes from air and their enumeration.	Batch A,D,C.	03
5		MPN (bacteriological examination of water).		03
6		IMVIC (bacteriological examination of water).		03
7		Isolation of mycotoxin from infected food and vegetables.		03
8		Visit to waste water plant (field visit).		03
9		Visit to Fermentation/Food Industry		03

Name of Teacher: Miss. Swati G. Swami **Class: B.Sc III (Fifth Semester)**

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	SEC	Isolation and characterization of Rhizobium.	09.07.2019 TO 22.10.2019 Batch B & D.	02
2		Mass production and carrier based inoculum preparation of Rhizobium.		02
3		Isolation and characterization of *Azospirillum* and *Azotobacter*.		02
4		Mass production and carrier based inoculum preparation of *Azospirillum* and *Azotobacter*.		02
5		Isolation and characterization of Cyanobacteria from water bodies.		02
6		Production of Cyanobacteria based flakes.		02
7		Isolation and characterization of PSM from soil.		02
8		Mass production and carrier based inoculum preparation of PSB		02

Teacher

Head

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Department of Biotechnology
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Principal

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		Concept, definition, principles of irradiation, Types, Application.		03		
		Unit III 1. **Preservation by drying:** Concept, history, types of drying and dryers, treatments prior to drying. 2. **Preservation by use of high temperature:** Concept and importance, various methods used-pasteurization, Boiling, Canning, Effect of high temperature on food.	14-08-19 To 07-09-19	01 01 01 01 02 02 01	Classroom Seminar Group Discussion	
		Unit IV 1. **Preservation by Low Temperature:** Concept, History, types of preservation methods by low temperature, Different equipments used for preservation by low temperature, Treaments prior to freezing. 2. **Modern techniques in food preservation:** Concept, definition, High hydrostatic pressure, hurdle technology, pulse electric field.	10-09-19 To 10-10-19	02 01 03 02 02	Classroom Seminar Group Discussion	

Name of Teacher: Miss. Swati G. Swami **Class: B.Voc. I (Second 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	**Food Biochemistry**	**Unit 1** • Introduction to different food groups and importance of food chemistry; • Water in foods and its properties. • Carbohydrate: Sources of food carbohydrates; • Physico-chemical • functional properties; • chemistry and structure of monosaccharide's • heterosachharides.	10-12-19 To 02-01-20	02 02 03 02 02 02 02	Classroom Seminar Group Discussion	Unit – I 03.01.2020 Unit – II 26.01.2020 Unit – III 03.02.2020.
		Unit II • Proteins and protein structures; • Essential amino acids, • Proteins: Sources • physico-chemical • functional properties; • Metabolism of proteins (digestion and absorption); • Nitrogen balance • nitrogen pool Purification of proteins; • Common food proteins.	03-01-20 To 25-01-20	03 02 01 01 01 02 01 01	Classroom Seminar Group Discussion	

		food involved, toxicity and symptoms, chemical properties, environmental conditions **2.**Food borne viruses: Polio, hepatitis A and E, noroviruses, rota viruses, prion diseases, types of food involved, toxicity and symptoms .	10-10-19	01 01 02 02 02	Group Discussion	

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	**Introductory Food Microbiology**	Isolation of bacteria and molds from foods.	09-07-19	01
2		Microbial examination of cereal and cereal products: Identification, isolation and confirmation.	16-07-19	01
3		Microbial examination of vegetable and fruits: Identification, isolation and confirmation.	23-07-19	01
4		Microbial examination of meat and meat products: Identification, isolation and confirmation.	30-07-19	01
5		Microbial examination of fish and other sea foods: Identification, isolation and confirmation.	06-08-19	01
6		Microbial examination of eggs and poultry: Identification, isolation and confirmation.	13-08-19	01
7		Microbial examination of milk and milk products: Identification, isolation and confirmation.	20-08-19	01

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	**Quality Control and Regulations**	**Unit I** 1. Introduction to Quality Control in the food industry – 2. General concepts of quality and quality control – 3. Major quality control functions 4. Sampling of Food - Sample Selection and Sampling Plans 5. Preparation and storage of Laboratory Samples - Sampling Methods.	10-12-19 To 02-01-20	03 02 02 02 02 02 02	Classroom Seminar Group Discussion	Unit – I 22.1.2020 Unit – II 26.01.2020 UNIT III Assignment
		Unit II 1. Standard tests for quality assessment – 2. Physical Tests, 3. Chemical tests 4. Microbiological tests. 5. Instrumental analysis of food – 6. Viscosity analysis - Consistency analysis - Texture analysis - Color analysis	03-01-20 To 25-01-20	03 02 01 02 01 02 03	One Min. Paper. Group Discussion	
		Unit III 1. Mandatory food laws; 2. The food safety and standards Act 2006, 3. Establishment of the authority, composition of authoring functions of chief executive officer, scientific part, General 4. principles to be followed in Revised August 2016 37 administration of act,	27-01-20 To 22-02-20	02 02 02 02 02 02 02	Classroom Seminar Group Discussion	

		significance of microbes in food science 2.Microbial spoilage of foods Factors affecting kinds, numbers, growth and survival of microorg anisms in foods, 3.Intrinsic factors; pH, water activity, nutrients etc and Extrinsic factors: Relative humidity, temp erature and gaseous atmosphere.	01-07-19 To 17-07-19	02 03 02	Classroom Seminar Group Discussio n	14.08.2019 Unit – III 29.08.2019.
		Unit II **1.**Chemical changes caused by microorganisms : Changes in nitrogenous organic compounds, non -nitrogenous organic compounds, organic acids, other compounds, lipids, pectic substances, **2.**Contamination of foods; Sources of contamination, Genera of bacteria, Maintenance of anaerobic conditions; Asepsis, removal of microorganisms moisture foods; **3.**Microbiology of cereal and cereal products	19-07-19 To 09-08-19	03 03 03 02	Classroom Seminar Group Discussio n	

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	**Process Biotechnology**	Isolation and Screening of Industrially important Microbes-Acid, Antibiotics, Enzymes	16/12/19 to 31/03/20	02
2		Strain improvement		02
3		Sterilization Techniques		02
4		Maintenance of pure Culture		02
5		Growth Curve		02
6		Growth kinetics: Effect of pH & Temp		02
7		Media Formulation		02
8		Sterilizer Design- TDP, TDT		02
9		Cell and Enzyme immobilization		02
10		Visit to Fermentation Industry		02

Name of Teacher: Miss. Swati G. Swami

Class: B.Sc III (Sixth Semester)

Sr. No.	Subject	Practicals	Date	No. of Practicals
1	**SEC: Biofertilizer II**	Survey of Biofertilizer products in market Practical.	16/12/19 to 31/03/20	02
2		Introduction to GMO and Indigenous Technology		02
3		Production of compost from various resources.		02
4		C, N, P and K analysis of organic manure.		02
5		Effect of storage on efficacy of Biofertilizer Practical.		02
6		QC tests of Biofertilizers		02
7		Designing of pot experiments for efficacy study of Biofertilizers.		02
8		Designing of field experiment to efficacy study of Biofertilizers.		02

Miss. S.G.SWAMI

Name of Lecturer

Signature

Head

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Principal

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