Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**Teaching Plan**

**Name of Asst. Prof: -** Avachat O. S

**Academic Year:** 2021-22 **Class:-** F.Y. Food Processing.

**Subject: -** Bakery & confectionery technology

**Semester -I**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Aug | I ,II, III & IV | Manufacture of Sugar | Sugarcane, jaggery, khandasari sugar, manufacture of sugar from sugar cane, refining of sugar. | 10 |
| Sep | I ,II, III & IV | Classification of confectionery |  Sugar boiled confectionery- crystalline and amorphous confectionery, hard candy, lemon drop, china balls, soft candy, lollypop, cream, caramel, toffee, gumdrops, honeycomb candy | 12 |
| Oct | I ,II, III & IV | Properties of wheat | Wheat – Properties, Quality – Hardness, Gluten strength, protein content, soundness. Methodology and approaches to evaluate bread and bread – wheat quality – processing factors, product factors. | 08 |
| Nov | I, II,  | Principles of baking and Bread manufacturing | Major baking ingredients and their functions, role of baking ingredients in improving the quality of bread. Characteristics of good flour used for making bread, biscuits and cakes. Ingredients used for bread manufacture, methods of mixing the ingredients, spoilage, bread staling, methods to reduce bread staling and spoilage. | 10 |
| Dec | I, II | Cake and Biscuit manufacturing | Processing of cakes and biscuits- ingredients, development of batter, baking and packing, Spoilage in cakes and biscuits. | 05 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**Teaching Plan**

**Name of Asst. Prof: -** Avachat O. S

**Academic Year:** 2021-22 **Class:-** F.Y. Food Processing.

 **Subject: -** Principles of food preservation

**Semester -I**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Aug | I, II, III & IV | Food Spoilage | -Definition, types of spoilage - physical, enzymatic, chemical and biological spoilage. Mechanism of spoilage and its end products, shelf life determination. | 10 |
| Sep | I, II, III & IV | Preservation by using Preservatives | Food preservation: Definition, principles, importance of food preservation, traditional and modern methods of food preservation. Food additives – definition, types, Class I and Class II preservatives | 12 |
| Oct | I, II, III & IV | Preservation by use of high temperature | Pasteurization: Definition, types, Sterilization, Canning - history and steps involved, spoilage encountered in canned foods, types of containers used for canning foods. Food irradiation – Principles, merits and demerits. | 10 |
| Nov | I, II,  | Preservation by use of Low Temperature | Refrigeration - advantages and disadvantages, freezing: Types of freezing, common spoilages occurring during freezing, difference between refrigeration and freezing. | 08 |
| Dec | I, II | Preservation by Removal of Moisture | Drying and dehydration - merits and demerits, factors affecting, different types of drying, Concentration: principles and types of concentrated foods. | 05 |

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**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**F.Y.Food Processing

 **Subject: -**  VFP1G03TB (Food Chemistry)

**Semester -I**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I & II | Water | 1)Introduction to food chemistry2)Structure of water molecule3)Types of water in food and their properties 4) Concept of water activity  | 10 |
| July |  III & IV | Carbohydrates | 1) Structure and functions of carbohydrates2) Classification of carbohydrates3) Concept of starch Gelatinization and gel formation | 10 |
| Aug | I & II | Proteins | 1) Sources, Structure, Function and Classification 2)Physical and chemical properties3)Changes in protein during food processing4) Enzymes, their mode of mechanism and controlling enzyme action | 10 |
| Sep |  II &III | Fats and Oils | 1) Composition, Structure, Functions, Classification2) Essential fatty acids3) Physical and chemical properties | 08 |
| Oct | I& II | Pigments | 1) Colours and flavours in food2)Pigments used in food processing3) Chemical and physical properties4) Effect of processing and storage on pigments | 07 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**F.Y.Food Processing

 **Subject: -**  VFP1G04TB (Food Science and Nutrition I)

**Semester -I**

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| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I & II | Introduction to Nutrition | 1)Definition of nutrition and health2)Inter-relationship between nutrition and health3)Malnutrition  | 06 |
| July |  III & IV | Food and water | 1) Definition and classification of food2) Basic five food groups3) Food balance pyramid4) New concepts of food5) Function, sources, requirement of water and water balance in human body | 10 |
| Aug | I & II | Vitamins | 1) Sources, Structure, Function and Classification 2)General cause for loss in food3)Bioavailability, enrichment and fortification4) Daily requirement and deficiency disorders  | 10 |
| Sep |  II &III | Minerals | 1) Functions, Sources, Classification2) Daily requirements3) Deficiency disorders | 10 |
| Oct | I& II | Energy | 1)Definition, unit of energy and source 2)Basal metabolic rate(BMR) and factors affecting on BMR3) Total energy requirement | 10 |

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**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**Teaching Plan**

**Name of Asst. Prof: -** Avachat O. S

**Academic Year:** 2021-22 **Class:-** F.Y. Food Processing.

**Subject: -** Bakery & confectionery technology (P)

**Semester -I**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I ,II, III & IV | Preparation of ghee biscuitsPreparation of sweet and salt biscuits | Procedure, Aim, Objectives, conclusion | 30 |
| Aug | I ,II, III & IV | Preparation of bread | Procedure, Aim, Objectives, conclusion | 15 |
| Sep | I ,II, III & IV | Preparation of jamnut cookiesPreparation of vanilla cake | Procedure, Aim, Objectives, conclusion | 15 |
| Oct | I, II,  | Preparation of cake.Visit to production unit of a bakery | Procedure, Aim, Objectives, conclusion | 30 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**Teaching Plan**

**Name of Asst. Prof: -** Gaikwad Omkar

**Academic Year:** 2021-22 **Class:-** F.Y. Food Processing.

**Subject: -** Communication skills in english (P)

**Semester -I**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I ,II, III & IV | Grammer | Articles, The Verb, Active and Passive Voice, Tenses, Modal Auxiliaries,The Adverb, The Preposition, Conjunction, Idioms, Phrasal Verbs, Direct and IndirectSpeech. | 20 |
| Aug | I ,II, III & IV | Listening | Active listening, Barriers to listening, Listening and note taking, Listening toannouncements, Listening to news on the radio and television. | 10 |
| Sep | I ,II, III & IV | Speaking | Brief introduction to the Phonetic script, Falling and rising tones, Participating inconversations, Small Talk, Making a short formal speech, telephone skills. | 20 |
| Oct | I, II,  | Reading | Reading: theory and Practice, Scanning, Surveying a textbook using an index,Reading for information, Understanding text structure, Locating main points, Makinginferences, Reading graphics, Reading for research. | 20 |
| Nov | I,II | Writing | Describing people, place, events and things, Short Stories, Vocabulary andComprehension, Guide to letter writing. | 20 |

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**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**F.Y.Food Processing

 **Subject: -**  VFP1G03PB (Food Chemistry Practical)

**Semester -I**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I & II | Safety measures in laboratory | 1)Aim and objective2) Material and method3)Conclusion | 10 |
| July |  III & IV | Determination of moisture content using hot air oven | 1)Aim and objective2) Material and method3) Result4) Conclusion | 15 |
| Aug | I & II | Determination of moisture content of liquid foods | 1)Aim and objective2) Material and method3) Result4) Conclusion | 15 |
| Sep |  II &III | Determination of titrable acidity for fruit juice | 1)Aim and objective2) Material and method3) Result4) Conclusion | 20 |
| Oct | I& II | Determination of ash content of biscuits | 1)Aim and objective2) Material and method3) Result4) Conclusion | 15 |
| Oct | III | Determination of iodine value of oil | 1)Aim and objective2) Material and method3) Result4) Conclusion | 15 |

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**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**Teaching Plan**

**Name of Asst. Prof: -** Avachat O. S

**Academic Year:** 2021-22 **Class:-** F.Y. Food Processing.

 **Subject: -** Dairy Technology **Semester -II**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Dec | I ,II, III & IV | Introduction- Milk | Definition, sources, and composition of milk, factors effecting composition ofmilk, physiochemical properties of milk, grading of milk-definition and types ofgrades, collection and transportation of milk. | 12 |
| Jan | I ,II, III & IV | Processing of market milk | - Flowchart of milk processing, Reception, Different types of cooling systems.Clarification and filtration process, standardization- Pearson’s square method,pasteurization-LTLT, HTST and UHT process- continuous pasteurizer, Sterilizationand Homogenization, Cream separation- centrifugal cream separator, bactofugation | 15 |
| Feb  | I ,II, III & IV | Special milks | Skim milk, evaporated milk, condensed milk, standardized milk, toned milk, doubletoned milk, flavored milk, reconstituted milk. | 13 |
| Mar | I, II,  | Indigenous and Fermented milk products | Product description, methods for manufacture of butter, cheese, khoa, paneer, shrikhand, ghee. Spray drying system: dried milk- whole milk andskim milk powder | 10 |
| Apr | I, II | In-Plant cleaning system | Introduction to Cleaning in- place (CIP) system - cleaning procedure, Cleaningefficiency, Methods of cleaning in food industry, cleaning solutions – Detergents,Sanitizers. Personal hygiene in dairy plant. | 10 |

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**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**F.Y.Food Processing

 **Subject: -**  VFP2G06TB (Sanitation and Hygiene)

**Semester -II**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan | I , II &III | Sanitation and Health | 1)Definition, importance2) Application of sanitation to food industry3) Microorganisms- characteristics and their control4) Food contamination, spoilage and food borne diseases | 13 |
| Feb | I &II  | Hygiene and Food Handling | 1)Purchasing and receiving safe food2) Sanitary procedures in food preparations3) Serving and displaying of food | 10 |
| Feb |  III & IV | Environmental Sanitation | 1) Location and layout of premises2) Sanitary requirements for equipments3) Guidelines for cleaning equipments4) Pest control, environmental pollution | 10 |
| Mar | I ,II & III  | Hygiene Practices in food idustry | 1) Introduction, necessity2) Personal hygiene3) Sanitary practices4) Safety at work place | 12 |
| April | I & II | Sanitation regulations and Standards  | 1)Regulatory agencies 2)Control of food quality 3) Food sanitation check list | 10 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**F.Y.Food Processing

 **Subject: -**  VFP2G07TB (Food Science and Nutrition II)

**Semester -II**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan | I , II &III | Body Composition | 1)Five levels of body composition2)Estimation of body composition3) Body composition changes4) Body Mass Index (BMI) | 12 |
| Feb | I, II &III  | Carbohydrates | 1) Definition, Classification2) Metabolism of carbohydrates 3) Glycemic Index and glycemic load4) Resistant starch | 13 |
| Mar |  I & II | Proteins | 1) Definition, classification of amino acids2)Protein metabolism3) Transamination, Deamination and urea cycle | 13 |
| Mar | II, III & IV  | Lipids | 1) Definition, classification, structure2) Physical and chemical properties3) Digestion of lipids  | 13 |
| April | I & II | Inborn errors of metabolism | 1) Introduction, definition2) Inborn errors of carbohydrate metabolism3) Inborn errors of Protein metabolism  | 09 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**Teaching Plan**

**Name of Asst. Prof: -** Avachat O. S

**Academic Year:** 2021-22 **Class:-** F.Y. Food Processing.

**Subject: - Dairy Technology (P)**

**Semester -II**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Dec | I ,II, III & IV | Milk Testing- Platform Tests.Determination of Activity (Titrable Acidity) of Milk. | Procedure, Aim, Objectives, conclusion | 20 |
| Jan | I ,II, III & IV | Determination of fat and SNF content in milk.Clot on boiling test for milk | Procedure, Aim, Objectives, conclusion | 22 |
| Feb  | I ,II, III & IV | Determination of specific gravity of milk.Preparation of Lassi. | Procedure, Aim, Objectives, conclusion | 20 |
| Mar | I, II,  | Preparation of khoaPreparation of Basundi | Procedure, Aim, Objectives, conclusion | 15 |
| Apr | I, II | Preparation of chakka and shrikand | Procedure, Aim, Objectives, conclusion | 13 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**Teaching Plan**

**Name of Asst. Prof: -** Gaikwad Omkar

**Academic Year:** 2021-22 **Class:-** F.Y. Food Processing.

**Subject: -** Critical thinking, academic writing & presentation skills **(P)**

**Semester -II**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Dec | I ,II, III & IV | Critical thinking | Introduction to critical thinking, Benefits, Barriers, Reasoning, Arguments, Deductiveand inductive arguments, Inferential comprehension, Critical thinking inacademic writing, Elements: Clarity, Accuracy, Precision and Relevance. | 20 |
| Jan | I ,II, III & IV | Research for academic writing | Data collection, Use of print, electronic sources and digital sources. Selecting keypoints, Note making, paraphrasing, summary. | 20 |
| Feb  | I ,II, III & IV | Writing process | Documentation, Plagiarism. Structure and Content: Title, Body paragraphs,Introduction and conclusion. Revising, Proof-reading. | 15 |
| Mar | I, II,  | Writing models | Letters, Letters to the editor, Resume and covering letters, e-mail, Seminar papers,Project reports, Notices, Filling application forms, Minutes, agenda, Essays | 15 |
| Apr | I, II | Presentation skills | Soft skills for academic presentations, Effective communication skills, Structuring thepresentation, Choosing appropriate medium, Flip charts, OHP, PowerPointpresentation, Clarity and brevity, Interaction and persuasion, Interview skills, GroupDiscussions | 20 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**Teaching Plan**

**Name of Asst. Prof: -** Jagtap.S.T

**Academic Year:** 2021-22 **Class:-** F.Y. Food Processing.

**Subject: -** Business Communication **(P)**

**Semester -II**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Dec | I ,II, III & IV | Basis of Communication | 1)Meaning importance and process of communication2) Need and objectives of communication3)7Cs of communication 4) How to overcome communication barrier. | 18 |
| Jan | I ,II, III & IV | Media of Communication | 1) Introduction and concept of media communication2) Verbal and nonverbal communication3) Channel of formal and informal communication | 12 |
| Feb  | I ,II, III & IV | Listening as a Communication Tool | 1) Meaning and important types of listening2) Barriers to effective listening and how to make listening3) Effective speech and presentation characteristics of a good speech4) How to make effective presentation5) Planning preparation organising hearing and delivery of presentation | 25 |
| Mar | I, II,  | Groups | 1) Importance of features advantage and disadvantages techniques of group discussion2) Group discussion making brain stroming stations3) Nominal group technique4) Solving problems in groups | 15 |
| Apr | I, II | New Trends in Business Communication | 1) Explain new techniques of communication2) Email, teleconferencing, video conferencing, SMS | 20 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Avachat. O. S

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -**  VFP3G08TB (Technology of fish, meat & egg processing)

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| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I, II & III | Compositional and Nutritional aspect of Animal foods | Fish - Classification of fish (fresh water and marine), composition, spoilage of fish -microbiological, physiological, biochemical. Meat - Definition of carcass, concept of red meat and white meat, composition of meat, marbling in meat, post mortemchanges in meat - rigor mortis, tenderization of meat, ageing of meat. Egg- Composition and nutritive value, egg proteins, characteristics of fresh egg,deterioration of egg quality. | 15 |
| July |  III & IV | Fish Processing | Preservation of fish-Chilling, Freezing, curing, drying, salting - salting methods:brining, pickling, curing and canning of fish. Smoking - smoke production, smokecomponents, quality, safety and nutritive value of smoked fish. | 08 |
| Aug | I & II | Meat processing | Meat Quality - colour, flavour, texture, Water Holding Capacity (WHC),Emulsification capacity of meat.  Preservation of meat -Refrigeration and freezing,thermal processing - canning of meat, dehydration, meat curing. | 15 |
| Sep |  II &III | Products from fish, meat and egg | Fishery products: Surimi - Process, traditional and modern production lines, qualityof surimi products. Fish protein concentrates (FPC), fish protein extracts (FPE | 10 |
| Oct | I & II | Products from fish, meat and egg | Meatproducts: Sausages - processing, RTE meat products. Egg products– Egg powder,frozen egg pulp, designer eggs. | 12 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Vishal Divekar

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -**  VFP3G08TB - Technology of Fish, Meat & Egg Processing

**Semester -III**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Aug | I, II & III | **Compositional and Nutritional aspect of Animal foods** | **Compositional and Nutritional aspect of Animal foods- Fish - Classification of fish (fresh water and marine), composition, spoilage of fish -microbiological, physiological, biochemical. Meat - Definition of carcass, concept of red meat and white meat, composition of meat, marbling in meat, post mortemchanges in meat - rigor mortis, tenderization of meat, ageing of meat. Egg- Composition and nutritive value, egg proteins, characteristics of fresh egg,deterioration of egg quality.** | 15 |
| Sep |  III & IV | **Fish Processing** | **Preservation of fish-Chilling, Freezing, curing, drying, salting - salting methods:brining, pickling, curing and canning of fish. Smoking - smoke production, smokecomponents, quality, safety and nutritive value of smoked fish.** | **08** |
| Oct | I & II | **Meat processing** | **Meat Quality - colour, flavour, texture, Water Holding Capacity (WHC),Emulsification capacity of meat.  Preservation of meat -Refrigeration and freezing,thermal processing - canning of meat, dehydration, meat curing.** | **15** |
| Nov |  II &III | **Products from fish, meat and egg** | **Fishery products: Surimi - Process, traditional and modern production lines, qualityof surimi products. Fish protein concentrates (FPC), fish protein extracts (FPE). Meatproducts: Sausages - processing, RTE meat products. Egg products– Egg powder,frozen egg pulp, designer eggs.** | **10** |
| Dec | I& II | **Products from fish, meat and egg** | **- Fishery products: Surimi - Process, traditional and modern production lines, qualityof surimi products. Fish protein concentrates (FPC), fish protein extracts (FPE). Meatproducts: Sausages - processing, RTE meat products. Egg products– Egg powder,frozen egg pulp, designer eggs.** |  |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Vishal Divekar

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -**  VFP3G09TB (Technology of spices and plantation crops)

**Semester -III**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Aug | I, II & III | Spice processing | 1) Introduction, classification, composition, functions2) International quality specifications of spices3) Spice processing and post processing treatments4) Introduction to gas chromatography, Spectrophotometer | 15 |
| Sep |  III & IV | Processing of major spices | 1) Study of major spices like black pepper, cardamom, ginger, clove, cinnamon chili, turmeric etc.2) Method of manufacturing3) Chemistry of volatile compounds | 15 |
| Oct | I & II | Spice extractives | 1)Value added spice products2) Spice volatile oils, spice oleoresins 3) Use of spice extractives, alternative products4) Ground spices, processed spices, organic spices, curry powders | 10 |
| Nov |  II &III | Plantation crops | 1)Cashew processing-Composition, Structure and characteristics of cashew nut2) Uses, Traditional method of cashew processing3) General processing,  | 10 |
| Dec | I& II | Sugarcane and cocoa processing | 1)Production and processing of sugarcane2) Cocoa: varieties, Processing of cocoa3) Manufacture of chocolate- conching, milk chocolate, dark chocolate, cocoa butter, wafer coated chocolate,  | 10 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Avachat. O.S

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -**  VFP3G10TB – Food Microbiology

**Semester -III**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I, II & III | Introduction to food microbiology | Discovery, current status, role of food microbiology, sources of micro organisms in food, changes caused by microorganisms - food fermentation.Growth and survival of microorganisms in foods, biological, chemical and physicalchanges caused by microorganisms, physical and chemical methods to controlmicroorganisms. | 09 |
| July |  III & IV | Characteristics of microorganisms | Classification of microorganisms, nomenclature, morphology – yeast and moulds,bacterial cells, viruses. Important microbes in food, microbial growth characteristics –Microbial reproduction, nature of growth in food. Food hygiene and sanitation:Contamination during handling and processing and its control. | 11 |
| Aug | I & II | Food preservation | Factors influencing microbial growth in food: Intrinsic and extrinsic factor -Hydrogen ion concentration, Moisture requirement, concept of water activity,temperature, oxidation reduction potential, Principles of different food preservation methods. | 10 |
| Sep |  II &III | Spoilage in different food groups | Food spoilage – Introduction, spoilage in cereals, vegetables and fruits, meat, poultry, fish, milk and milk products, canned foods, nuts and oil seeds, fats and oilseeds. | 16 |
| Oct | I & II | Beneficial uses of microorganisms | Microorganisms used in food fermentation, mechanisms of nutrient transport, intestinal bacteria and probiotics, food bio preservatives of bacterial origin, food ingredients and enzymes of microbial origin. Economic importance of microorganisms. | 14 |

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**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Avachat. O.S

 **Academic Year:** 2021-22 **Class:-** S.Y.Food Processing

 **Subject: -**  VFP3S07PB – Chemical & microbial analysis of foods (Practical)

**Semester -III**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I,II,III, IV  | Demonstrations of process of essential oil extraction and oleoresin of different spice.Detection of papaya seeds in black pepper | 1)Aim and objective2) Material and method3) Result4) Conclusion | 20 |
| Aug | I & II | Preparation of fermented foods | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |
| Sep |  II, III & IV | Introduction to the Basic Microbiology Laboratory Practices and EquipmentsFunctioning & use of compound microscope | 1)Aim and objective2) Material and method3) Result4) Conclusion | 20 |
| Oct | I & II | Cleaning and sterilization of glasswarePreparation of slant, stab and plates using nutrient agar. | 1)Aim and objective2) Material and method3) Result4) Conclusion | 20 |
| Nov | I & II | Standard Plate Count Method.Visit to oil refining industry | 1)Aim and objective2) Material and method3) Result4) Conclusion | 20 |

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Netaji Shikshan Sanstha’s

**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mrs. Jagtap. S. T

 **Academic Year:** 2021-22 **Class:-** S.Y.Food Processing

 **Subject: -**  VFP3S08PB – Business Management (Practical)

**Semester -III**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I,II,III, IV  | Management | 1) Introduction meaning characteristics and nature of management2)Scope and functional areas of management3)Management as a science art or profession4) Management and administration principles of management5) Social responsibility of management | 15 |
| Aug | I & II | Planning | 1) Meaning nature and importance of planning2) Purpose of planning3) Objectives types of plans4) Planning process | 15 |
| Sep |  II, III & IV | Organising and Staffing | 1) nature and purpose principles of organisation2) types of organisation3) organisation chart organisation manual departmentation committees4) delegation of authority responsibility and accountability centralisation VS decentralization of authority5) nature and importance of staffing6) process of selection and recruitment | 20 |
| Oct | I & II | Direction and motivation | 1)Meaning and nature of direction2) Meaning and importance of motivation3) Theories of motivation(Maslow's, Herzberg, McGregor s X&Y theory4) Leadership meaning style managerial grid by Blake and mountain likerts four level model5) Coordination meaning and importance | 20 |
| Nov | I & II | Controlling | 1) Meaning and steps in controlling2) Essentials of a sound control system3) Methods of establishing control4) Control by Exception | 20 |

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**Subhash Baburao Kul Arts,Commerce,Science College**

Kedgaon, Tal: Daund, Dist: Pune, 412203.

**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Avachat. O.S

 **Academic Year:** 2021-22 **Class:-** S.Y.Food Processing

 **Subject: -**  VFP3S09PB – Technology of Fish, Meat and Egg Processing (Practical)

**Semester -III**

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| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I & II | Slaughtering and dressing of poultry bird  | 1)Aim and objective2) Material and method3)Conclusion | 05 |
| July |  III & IV | Determination of water holding capacity of meat  | 1)Aim and objective2) Material and method3) Result4) Conclusion | 05 |
| Aug | I & II | Determination of meat pH  | 1)Aim and objective2) Material and method3) Result4) Conclusion | 05 |
| Sep |  II, III & IV | Preparation of meat products and Tenderization of meat  | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |
| Oct | I & II | Composition, structure of egg and Preservation of shell egg  | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |

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**Subhash Baburao Kul Arts,Commerce,Science College**

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Avachat. O.S

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -**  VFP4G11TB – Technology of Cereals, pulses & oilseeds

**Semester -IV**

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| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan | I & II | Paddy Processing | Composition and Quality characteristics. Curing of Paddy. Parboiling Processessoaking,steaming, drying,Paddy Dryer -LSU Dryer. Production of Flattened Rice and Puffed Rice from Paddy. | 10 |
| Jan |  III &IV  | Rice Milling | Paddy Dehusking Processes. Rice Mill Flow Chart. Engelberg Huller Mills. ModernRice Mills – Their Components - Pre Cleaners, rubber roll Shellers, Paddy Separators– Satake type, Extraction of rice bran oil and uses of rice bran in food industry | 15 |
| Feb |  I, II & III | Wheat milling | Wheat - composition and nutritional value, wheat milling process – cleaning-conditioning/hydrothermal treatment, milling-break roll and reduction rolls. | 10 |
| Mar | I,II, III & IV  | Milling of Pulses | Varieties-chemical composition and structure-dry milling and wet milling process ofpulses, processed products of pulses. | 10 |
| April | I & II | Oil seed processing | Introduction- methods- hydraulic press- screw press – principle and working, solventextraction methods, Clarification, degumming, neutralization, bleaching,deodorization techniques/process, blending of oils. Hydrogenation. | 15 |

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Avachat. O.S

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -**  VFP4G12TB – Technology of Beverages

**Semester -IV**

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| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan | I & II | Introduction to beverages | 1)Types of beverages and their importance 2)Status of beverage industry in India3)Manufacturing technology for juice-based beverages, technology of still, carbonated4) Role of various ingredients of soft drinks, carbonation of soft drinks | 10 |
| Jan |  III &IV  | Manufacturing process of beverages | 1)Beverages based on tea, coffee2)Processing of cocoa, spices, plant extracts, herbs, nuts3) Dairy based beverages  | 10 |
| Feb |  I, II & III | Types of coffee and tea | 1)Chemical composition and processing of tea and coffee and their quality assessment 2) Types of tea3) Types of coffee | 15 |
| Mar | I,II, III & IV  | Alcoholic Beverages | 1)Types, manufacture and quality evaluation2) The role of yeast in beer and other alcoholic beverages 3) Types of beer 4) Equipments used for brewing and distillation5) Wine and related beverages, distilled spirits. | 15 |
| April | I & II | Packaged Drinking Water | 1)Definition, types, manufacturing processes 2) Quality evaluation and raw and processed water3) Methods of water treatment4) BIS quality standards of bottled water; mineral water, carbonated water. | 10 |

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Avachat. O.S

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -** VFP4G13TB – Food Product Design and Development

**Semester -IV**

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| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan | I , II &III | Concept of product development | 1)Need, importance and objectives of formulation for new product development2)Product success and failure, factors for success 3) process of product development, managing for product’s success 4)Innovation strategy - possibilities for innovation, building up strategy, product development programme | 12 |
| Feb | I, II &III  | Product development process | 1)Ideas, Formulation based on sources availability 2) Cost competitiveness for concept developments of new products3)Product strategy, product design and process development, product launch and evaluation | 12 |
| Mar |  I & II | Knowledge base for product development technology | 1)Adaptable technology and sustainable technology for standardized formulation for process development2)Knowledge and the food system, knowledge management, knowledge for conversion of product concept to new product3) Process control parameters and scale up | 12 |
| Mar | II, III & IV  | Role of consumers in product development | 1)Consumer behavior2) Food preferences, avoiding acceptance 3) Integration of consumer needs in product development and sensory needs. | 12 |
| April | I & II | Managing the product development process | 1)Principles of product development management2) People in product development management3) Designing the product development process, key decision points. | 12 |

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat .O.S

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -** VFP4S10PB – Technology of Cereals, Pulses and Oilseeds (Practical)

**Semester -IV**

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| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan | II, III, IV | Physical characteristics of WheatEstimation of Gluten Content of flour. | Aims,Objectives,Result,Conclusion. | 20 |
| Feb | I,II,III, IV | Estimation of Potassium Bromate in flour.Physical Characteristics of Rice and paddy | Aims,Objectives,Result,Conclusion. | 20 |
| Mar | I,II, III & IV  | Cooking characteristics of rice.Visit to rice mill station. | Aims,Objectives,Result,Conclusion. | 30 |
| April | I & II | Visit to beverage unit. | Aims,Objectives,Result,Conclusion. | 20 |

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Mr. Vishal Divekar

 **Academic Year:** 2021-22 **Class:-**S.Y.Food Processing

 **Subject: -** VFP4S11PB – Byproduct utilization and Waste management Practical

**Semester -IV**

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| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan | II | Waste Management | 1)Aim and objective2) Material and method3)Conclusion | 05 |
| Feb | I  | Waste Characterization | 1)Aim and objective2) Material and method3) Result4) Conclusion | 05 |
| Feb |  II & III | Effluent Treatment | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |
| Mar | II & IV  | Waste utilization of agro industries | 1)Aim and objective2) Material and method3) Result4) Conclusion | 15 |
| April | I & II | Waste utilization of animal and marine product | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |

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**Teaching Plan**

**Name of Asst. Prof: - Prof Jagtap S.T.**

**Academic Year:** 2021-22 **Class: - S.Y Food processing**

**Subject: - VFP4S12PB- Marketing Management**

**Semester -IV**

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| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I ,II, III & IV | Marketing management | 1) introduction and Definitions of marketing and marketing management2)Nature ,scope and concept of marketing3) functions of marketing4) marketing research5) marketing mix | 15 |
| Aug | I ,II, III & IV | Marketing segmentation | 1) meaning concept need of segmentation2) basis of market and market targeting3)market positioning and understanding the consumer Behaviour4) buying motives5) factors influencing consumer buying decisions | 15 |
| Sep | I ,II, III & IV | Marketing of products | 1) product meaning development and mix2)branding brand equity and brand loyalty3) Trademarks ,packaging and labelling4) pricing of products, factors influencing pricing5) pricing policies and strategies and types of pricing | 20 |
| Oct | I ,II, III & IV | Logistic and supply chain management | 1) ts elements and concept of logistics2) channels of distribution3)factors affecting the choice of a channel of distribution4) types of channels distribution | 20 |
| Nov. | I, II, III & IV | Emerging trends in marketing | 1) introduce modern marketing2) direct marketing and e marketing3) tele marketing and viral marketing4) relationship marketing and social marketing5) social media marketing and Demarketing | 20 |

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**T.Y.Food Processing

 **Subject: -**  VFP5G16TB – Sensory Evaluation of foods

**Semester -V**

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| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | I & II | Introduction to sensory |  1)Definition of sensory evaluation2) basic tastes; human senses and sensory perception; threshold; psychophysics, Tongue surface | 10 |
| July | III & IV | Arrangements for Sensory Evaluation Test controls | 1)Environment and test room design2) Product controls: sample preparation and presentation3)Panelist controls; factors influencing measurements: psychological and physiological errors | 10 |
| Aug | I ,II & III  | Statistical Methods for Sensory Evaluation | 1)Classification of test methods2)Qualitative (interview and focus group) and quantitative tests (paired preference and acceptance tests) 3)Two sample test, Ranking test, Two sample difference test, numeric scoring test, hedonic ranking test | 15 |
| Sep | II, III, IV  | Subjective and objective methods | 1)Texture analyser2)Mechanical characteristics- chewiness, brittleness, and geometric characteristics3)Sensory panel-types-criteria for panel selection | 15 |
| Oct | I& II | Applications of Sensory Analysis in the Food Industry | 1)Quality control2)Storage stability testing 3)Product development and consumer acceptance testing | 10 |

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**T.Y.Food Processing

 **Subject: -**  VFP5S14PB – Food Processing Equipments (Practical)

**Semester -V**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| July | III & IV | Introduction to equipments used in food industry | 1)Aim and objective2) Material and method3)Conclusion | 05 |
| Aug | I ,II, III & IV | Mechanical Equipments | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |
| Sep | I ,II, III & IV | Heat exchangers, dryers and evaporators  | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |
| Oct | I ,II, III  | Refrigeration and thermal processing equipments | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |
| Oct | IV | Food packaging Equipments | 1)Aim and objective2) Material and method3) Result4) Conclusion | 10 |

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**T.Y.Food Processing

 **Subject**: VFP6G17TB - Unit Operations in Food Industry

**Semester -VI**

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| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan | I , II &III | Heat Transfer in Food Processing |  1)Modes of heat transfer 2)Heat exchangers- plate heat exchanger-tubular heat-scraped surface heat exchanger. | 10 |
| Feb | I &II | Evaporation | 1)Basic principle2) Need for evaporation3)Types of evaporation4)Heat economy | 10 |
| Mar |  I, II & III | Distillation and crystallization | 1)Simple distillation, flash distillation, steam distillation, fractional distillation2) Crystallization -theory, tank crystallizer and scraped surface crystallizer. | 15 |
| Mar | III & IV  | Extraction and extrusion | 1)Solid Liquid extraction2)Liquid-Liquid extraction, Super critical fluid extraction3) Single screw extruder, twin screw extruder | 15 |
| April | I & II | Mechanical separation and material handling | 1)Sedimentation, Centrifugal separation, filtration2) Material handling3) Types of conveyors | 10 |

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**B.Voc (Food Processing)**

**Teaching Plan**

 **Name of Asst. Prof: -** Avachat O. S

 **Academic Year:** 2021-22 **Class:-**T.Y.Food Processing

 **Subject: -**  VFP6G18TB - Food Quality Assurance

**Semester -VI**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Month** | **Week**  | **Topic** | **Learning Points** | **No. of Periods** |
| Jan |  II &III | Concept of quality | 1)Quality attributes2)Physical, chemical, nutritional, microbial, and sensory3)Measurement and evaluation  | 10 |
| Feb | I, II &III  | Concepts of quality management | 1)Objectives, importance and functions of quality control2)Quality management systems in India3) Food laws and regulations | 15 |
| Mar |  I & II | HACCP system | 1)HACCP introduction2) Definition, principles3) Guidelines for the application of HACCP system. | 10 |
| Mar | II, III & IV  | Food Quality Laws and Regulations | 1)Quality assurance2)Total Quality Management, GMP/GHP, GLP, GAP3)Indian & International quality systems and standards like ISO and Food Codex, Export import policy | 15 |
| April | I & II | Intellectual Property Rights | 1)Introduction, History in India2)Laws related to IPR, Copyright, patent, trademark, designs, geographical indications of food3)World Intellectual Property Organization (WIPO)4) Commercialization of Intellectual Property Rights (IPR), important websites | 10 |

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