Training Schedule FOOD PROCESSING (358)

(Theory -30 hrs, Practical - 90 hrs)

Session / Day	Lesson	Theory (1 ½ hrs.)	Practical (3½ hrs)	Self study /assignment	Learning Outcomes
Day 1	1.Foods – Nutrients and Functions	 1.3 Functions of food Physiological Psychological Social 1.4 Nutrients and their functions Macronutrients Micronutrients Carbohydrates Fats and Oils Proteins Water Minerals Vitamins Sources and functions of Nutrients 1.5 Food Groups for your Health 	 Practical 1.5 1.5.1 1.5.2 1.5.3 1.5.4 Record the outcomes of all the above practical activities in the Practical File 	Intext Questions Terminal Questions Undertake small group discussion with family and friends on the following topics: - Nutrients and their functions - Food groups commonly used in the dishes prepared at home - Nutrients available through consumption of these dishes	 Exhibits awareness about the different functions of food Categorizes and lists the different nutrients as follows: Macronutrients Carbohydrates Fats and Oils Proteins Water Micronutrients Minerals Vitamins Selects foods required for health
Day 2	2. Foods – Cooking	 2.3 Need for Cooking 2.4 Preparing food for cooking Pre cooking procedures for foods Cleaning/ Washing Peeling/Cutting/ Grating Pounding Grinding Soaking Sprouting Mixing/Kneading 	 Practical Exercise 2.8 Practical Exercise 2.8.1 Practical Exercise 2.8.2 Record the outcomes of all the above practical activities in the Practical File 	Intext Questions 2.1 Intext Questions 2.2 Terminal Questions Undertake small group discussion with family and friends on the following topics: Pre cooking procedures for cooking foods Continue practice of the pre-cooking procedures	 Appreciates the Need for Cooking Observes appropriate Pre cooking procedures

Day 3	2. Foods – Cooking	5 Methods of cooking	 Practical Exercise 2.8.3 Practical Exercise 2.8.4 Record the outcomes of all the above practical activities in the Practical File 	Practice of cooking dishes using the different methods of cooking:	Cooks different dishes by the different methods of cooking Adopts the prescribed good cooking practices
Day 4	3. Foods – Quality Assurance	3.3 Quality of Foods 3.4 Purchasing Quality Foods - What to buy? - Where to buy? - When to buy? 3.5 Check for Adulteration - What is adulteration? - Adulterants present in foods - Simple tests to detect adulteration at home - Simple tests for adulterants	Practical Exercise 3.7 Record the outcomes of all the above practical activities in the Practical File Demonstration and practice of detection of Adulterants	 Intext Questions 3.1 Continue the practice of detection of Adulterants Record the observations and the method used in each case in the practical file 	 Defines quality of food Aware of the characteristics of quality food Takes wise decisions about What to buy? Where to buy? When to buy? Lists food adulterants used Uses simple methods to detect adulteration in different foods Evaluates purchased foods for quality and presence of adulterants.

Day 5	4. Foods – Safety	4.3 Food safety	 Practical Exercise 4.7 	Intext Questions 4.1.1	• Defines food safety
		3.4 Food Hazards	 Practical Exercise 4.7.1 	Intext Questions 4.1.2	• Aware of the types of food
		• Food spoilage due to:	 Practical Exercise 4.7.2 	Intext Questions 4.2	hazards
		- Microbes	 Practical Exercise 4.7.3 		• Recognizes the dangers of
		- Adulterants	 Record the outcomes of all 		food hazards
		- Natural Toxicants	the above practical	In the practical file draw	 Identifies the agents that
		- Food Additives	activities in the Practical	the logos of the following:	contaminate foods
		- Chemicals and Pesticides	File	- Indian Standards	• Identifies the symptoms of
		5.5 Food Laws and Regulations	 Undertake group 	Institute	food poisoning
		Indian Standards Institutions	discussion on the	- The Prevention of	 Evaluates food consumed
		- Agmark	following:	Food Adulteration Order	with regard to its safety and
		- FPA	 Food Hazards 	- ECO mark	wholesomeness
		- Vegetable Control Order	 Food Laws and 	Undertake a study to find	• Lists the food laws meant
		- FPO	Regulations	out whether all food	for food safety and
		- The Meat Products Order	 Surf net to study the 	products being purchased	purchases foods duly
		- ECO Mark	procedure for applying	by your family are duly	certified
			for different Indian	certified or not. Write a	
			Standards:	report of your	
			• Record the outcome in the	observations in the	
			practical file	Practical File	

Day 6	5. Your Role as a Consumer	5.3 Consumer and Consumer Education -Who is consumer? -What is consumer education? -Why consumer education? 5.4 Consumer Buying Guide 5.5 Rights of a consumer 5.6 Consumer Protection Act 1986 5.7 Consumer Councils or forums	 Practical Exercise 5.9.1 Practical Exercise 5.9.2 Practical Exercise 5.9.3 Record the outcomes of all the above practical activities in the Practical File Undertake group discussion on the following: Rights of a consumer Consumer Protection Act 1986 Consumer Councils or forums Filing a complaint in the consumer forum Record the observations of the discussion in the practical file. 	 Intext Questions 5.1 Terminal Questions 5.10 Surf net to gather information on the following points: Rights of a consumer Consumer Protection Act 1986 Consumer Councils or forums near by Filing a complaint in the consumer forum. 	 Defines a consumer Appreciates the need for consumer education Adopts the consumer buying guide while purchasing goods Knowledgeable about the consumer protection act.
Day 7.	6. Processing of Foods	1.3 Definition of Food Processing 1.3.1 Primary and Secondary Processing 1.4 Why do we Process Food? 1.5 Processing of different foods • Processing of Cereals - Rice - Wheat - Other Cereals and Millets • Processing of Legumes - Wet Milling - Dry Milling	 Practical Exercises 1.9.1 Practical Exercises 1.9.2 Practical Exercises 1.9.3 Record the outcomes of all the above practical activities in the Practical File 	 Intext Questions 1.1.1 Intext Questions 1.1.2 1.10 Terminal Questions Undertake small group discussion with family and friends on the following topics: Meaning of food processing Why do we process food? Advantages of processing food 	 Differentiates between Primary and Secondary processing of foods Lists the Advantages and Disadvantages of food processing Explains the processing of Cereals Legumes Aware of the effect of processing on the nutritive value of foods Identifies and lists the processed foods available in the market

Day 8	6. Processing of Foods	 Processing of Oils and Fats Churning Pressing Solvent Extraction Hydrogenation Processing of Sugar and Jaggery Processing of Milk and Milk Products Processing of Coffee and Tea 1.6 Advances in Processing of Foods 1.7 Effect of Processing on Nutritional Quality of Foods 	 Continuation of Practical Exercises 1.9 Primarily Processed foods Convenience foods Listing and categorizing Evaluation of Convenience foods Visit to the Industry Record the outcomes of all the above practical activities in the Practical File 	Undertake a survey of your neighborhood homes to study the Processed products commonly used in homes and the reasons for their choice	 Explains the processing of Oils and Fats Sugar and Jaggery Milk and Milk Products Coffee and Tea
Day 9	7. Methods of Food Preservation	Meaning of Food Preservation 2.4 Need for Food Preservation 2.5 Causes of Food Spoilage - Micro-organisms - Enzymes - Insects and Rodents - Other factor speeding deterioration of foods 2.6 Perishability of Foods	 Practical exercises 2.9:- 2.9.1 Preserved foods available in the market 2.9.2 Preservation at Household Level Record the outcomes of all the above practical activities in the Practical File 	 Intext Questions 2.1:- Undertake small group discussion with family and friends on the following topics: Need for Food Preservation Causes of Food Spoilage Perishability of Foods 	 Defines food preservation Appreciates the need for preserving foods Aware of the common causes of food spoilage Classifies foods on basis of keeping quality and perishability
Day 10	7. Methods of Food Preservation	7 Methods of Food Preservation - Dehydration - Altering Temperature - Use of Salt, Sugar and Vinegar - Chemical Preservatives - Irradiation	 Practical exercises 2.9:- 2.9.3 Preparation of Preserved foods Mixed Fruit Jam Orange Squash Green Chilly and Lime Pickle 2.9.4 Using Seasonal 	• Intext Questions 2.1: 2.1.3 - 2.1.4	 Demonstrates the common methods of food preservation Selects appropriate method for preserving foods of daily use Evaluates preserved

Day 11.	8. Equipment used for Food Preservation	3.3 Using Equipment - Advantages - Disadvantages 3.5 Common tools and Equipment used at Home 3.6 Buying of Equipment 3.7 Use and Maintenance of Equipment 3.8 Equipment used at Industrial Level - Cleaning and Separation - Disintegration - Mixing - Heating - Cooling - Dehydration - Packaging - Control of Processing Operations	Fruits and Vegetables Record the outcomes of all the above practical activities in the Practical File 3.10 Practical Exercises: 3.10.1Household equipment 3.10.2 Market Survey Record the outcomes of all the above practical activities in the Practical File	Intext Questions 3.1 Intext Questions 3.1.2 Intext Questions 3.1.3 Terminal Questions 3.11	 Lists the advantages and disadvantages of equipment of food processing Aware of the common tools and equipments used for food preservation in the home Observes the suggested norms while buying equipment and tools Demonstrates the proper use and maintenance of tools and equipment Selects and uses appropriate equipment and tools for different types of food processing operations Differentiates between equipment used at home and in an industrial unit
Day 12.	9. Food Engineering - Industrial Plant Organization –	.3 Categories of Food Processes Preservation Extraction Single Component Edible Portion	 Practical Exercise 4.8.1 Practical Exercise 4.8.2 Record the outcomes of all the above practical activities in the Practical 	 Intext Questions 4.1 Tabulate and show the different types of unit operations listing their 	 Classifies the main categories of food processing Appreciates the importance of developing
	Layout and equipment Plan	Transformation Composite Products 4.4 Flow Sheet and Process Diagram	FileDiagrammatically explain the following in	meaning and how they are used	a Flow SheetUnderstands the different unit operations Explains

Day 13	9. Food	Types of Unit Operations 4.5 Process Calculation Raw Material Supply and	the practical file: - Classification of Categories of Food Processing - Process Diagram for Jam Making Practical Exercise 4.8.3 Record the outcomes of all the	Intext Questions 4.2Design a Process	how the different unit operations are used • Calculates the supply and availability of
	Engineering - Industrial Plant Organization – Layout and equipment Plan	Availability Energy and Water supply By-product and Waste Utilization 4.6 Feasibility Criteria for the Development and Management of Food Processing Unit Inputs Organization Outputs General	above practical activities in the Practical File Sketch the General Layout (Floor) plan of a Squash Making unit	chart and a layout Plan for preserving the following foods at home: - Apples - Oranges - Potatoes	raw materials • Ensures the availability of other resources of food processing • Works out the Feasibility Criteria for the development of a processing unit
Day 14.	10. Quality Control in Food Processing Unit	5.3 Areas Involved in Quality Control Engineering Marketing Economics Technology 5.4 Supportive Services in Quality Control - Storage - Ware- housing - Distribution 5.5 Organization of Services for Quality Control	Practical Exercises 5.9.1 Practical Exercises 5.9.2 Record the outcomes of all the above practical activities in the Practical File Make a Chart showing the major functions of the quality control in the unit	Intext Questions 5.1 5.10.Terminal Questions Tabulate the routine quality control procedures used in a food processing unit listing examples of the purpose against each procedure	 Defines quality control Appreciates the need for quality control in a food processing unit Describes the areas involved in quality control Lists the Support Services of quality control Aware of the organizations of quality control
Day 15	10. Quality	5.6 Functions of Quality Control - Product Development	Practical Exercises 5.9.3 Record the outcomes of all the	Intext Questions 5.2 Undertake market survey	Lists functions of Quality Control

	Control in Food Processing Unit	 Safety of Food Acceptability Chemical Analysis Routine Quality Control Procedures 5.7 Systems to Control Quality of Food Factory Level National Level 	above practical activities in the Practical File Surf net to study the body CODEX- Alimentations Commission and its role in Standards, Safety and Hygiene of processed foods • Write your observations in the practical file	to study the products sold with the quality standard markings like FPO, ISI, AGMARK etc. Discuss with family and friends about the benefits of buying foods with standard markings •	 Aware of the systems of quality control both at the factory level and national level Informed about the role of CODEX Promotes use of food products with quality standard markings of IFO,ISI, and AGMARK
Day 16.	11. Hygiene and Sanitation	 6.3 Sources of Contamination Primary Sources Food Handlers Water Food Insects and Rodents Secondary Sources Physical plant Equipment and Utensils Floors and Walls Ceilings 6.4 Controlling measures to Prevent Contamination Personal Hygiene Environment Hygiene Equipment and Utensils Premises 6.5 Safe Disposal of Garbage 6.6 By-Product and Waste Utilization 	6.8 Practical Exercises Record the outcomes of all the above practical activities in the Practical File Undertake Group Discussion on the following sources of Contamination: • Primary Sources - Food Handlers - Water - Food - Insects and Rodents • Secondary Sources - Physical plant - Equipment and Utensils - Floors and Walls - Ceilings	Intext Questions 6.1 Intext Questions 6.2 6.9 Terminal Questions • Discuss with family and friends about the Sources of Contamination and Controlling measures to Prevent Contamination • Record the outcome of the discussion in the practical file	 Identifies the sources of contamination Adopts measures to control continuation Practices general rules of personal hygiene Practices effective sanitary methods with regard to equipment, utensils, floors walls etc. Enumerates the measures for ensuring hygiene and sanitation Disposes waste as per prescribed norms Utilizes and safely disposes by-products
Day 17.	12. Packaging	1.3 Packaging 1.4 Packaging Material	1.6 Practical Exercises 1Practical Exercises 2	• Intext Questions 1.1/I • Intext Questions 1.1/II	Defines packaging and packaging

	Material	 1.4.1 Paper and Wood Unit Packages Bulk Packages Special Paper for bulk Package Glassine Grease Proof Vegetable Parchment Waxed Paper Enamel Paper Kraft Paper Corrugated Boards 1.4.2 Glass Bottles Closures for glass containers 1.4.3 Metal Containers 1.4.4 Plastics 1.4.5 Characteristics to look for in Packaging Material 	 Practical Exercises 3 Practical Exercises 4 Practical Exercises 5 Practical Exercises 6 Record the outcomes of all the above practical activities in the Practical File 	 Intext Questions 1.2/I Intext Questions 1.2/II Intext Questions 1.3/I 1.7 Terminal Questions Collect pictures of differently packed foods and paste in the practical file Against each picture comment on basis of the criteria prescribed for packaging of foods about its suitability and appropriateness 	materials • Appreciates the need for good packaging • Identifies and different types of packaging materials • Aware of the criteria for selection of packaging material • Selects and uses the correct packaging material
Day 18	13. Labels on Food Packages	2.3 Do you need labels? 2.4 Methods of Labeling 2.5 Label Information and Illustrations - Side Panels - Front Panel 2.6 Other Information 2.7 Nutrition Labeling 2.8 Certification Marks 2.8 Evaluation of Labels	 Practical Exercises 2.10/I Practical Exercises 2.10/II Record the outcomes of all the above practical activities in the Practical File Collect some labels and evaluate them for their appropriateness. Paste the labels and comment on their appropriateness 	 Intext Questions 2.1 Intext Questions 2.2 2.11 Terminal Questions Undertake a group discussion with friends and family on the following topics: Information and Illustrations Nutrition Labeling Certification Marks 	 Defines and explains what are labels Appreciates the need for labeling processed food products Demonstrates knowledge of the contents of a label Exhibits awareness about the contents on a label Adopts the correct method of labeling in relation to content and local preferences

Day 19.	14. Accessories Used in Packaging	 3.3 Printing Ink Compound unaccepted for ink on food package labels External Packages Immediate Wrapping 3.4 Gum and Adhesive 3.5 Staple Pins and Thread 	 Practical Exercises -1,2, 3, 4, 5 Record the outcomes of all the above practical activities in the Practical File Visit a shop stocking packaged foodstuffs and undertake the evaluation of the suitability of the following accessories used: External Packages Immediate Wrapping Gum and Adhesive Staple Pins and Thread 	Intext Questions 3.1 Intext Questions 3.2 3.8 Terminal Questions • Undertake a visit to a food processing unit and study the accessories used by it in packaging of products manufactured by them. Comment on their appropriateness • Record your observations in the practical file	 Defines accessories in packaging Lists the accessories of packaging Lists the accessories used in packaging Recognizes the accessories used in packaging of one's local area Evaluates the types of accessories available in one's local area Observes the prescribed do's and dont's with regard to the following: Printing Ink External Packages Immediate Wrapping Gum and Adhesive Staple Pins and Thread
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Day 20.	15. Marketing	 4.3 Marketing System Process of Marketing 4.4 Stages in Marketing 4.5 Preparation of the Product 4.6 Advertising Advertising Media 4.7 Distribution Intensive Distribution Extensive Distribution 4.8 Budgeting Forms of Budgeting 4.9 Book Keeping 	 Practical Exercises – 1 Practical Exercises – 2 Practical Exercises – 3 Practical Exercises – 4 Record the outcomes of all the above practical activities in the Practical File Undertake group discussion on different Advertising Media 	 Intext Questions 4.1 Intext Questions 4.2 Undertake a group discussion with friends and family on some advertisement that attracted them and motivated them to buy the product. Analyze the reasons for attracting their attention and motivating them 	Undertakes advertising of product using the following:- - Press - Mailing - Outdoor Advertisement - Radio and Television - Points of Sale - Door to Door Advertisement Differentiates between Intensive Distribution and Extensive Distribution Appreciates the need for budgeting Successfully makes all types of Budgets Undertakes systematic book keeping for classifying and recording all transactions.		
Day 21	PROJECT : 1 Prepare one dish	each using the following methods o	of cooking		<u></u>		
	- Cooking in Ste		i cooking				
	- Cooking using	Dry Heat					
	- Cooking in oil						
	<u> </u>	by Shallow Frying in the practical file					
Day 22	PROJECT:2	m me praedeur me					
		study the prescribed norms to be fu	ulfilled to be eligible for the follow	wing standardization marks	s:		
	- ISI						
	- FPO - AGMARK	- FPO - AGMARK					
	- ECO Mark						
		le Record the following:					

	I are of identification
	- Logo of identification
	- Standards expected in each case
	- The products for which each is issued
Day 23	PROJECT:3
	Design labels for the following products you plan to make in your unit:
	- Mango Pickle
	- Mixed fruit Jam
	Ensure to provide the following information:
	- Brand Name
	- Product name
	- Ingredients
	- Certification
	- Nutrition
	- Method of storage
	- Date of manufacture and expiry
	- Price
	Paste the designed label in the practical file and record the following also:
	Recipe of the product
	Flow Sheet and Process Diagram of both the products
Day 24	PROJECT:4
	Develop the Feasibility Criteria for the Development and Management of a pickle making unit you plan to set up.
	• Detailing the following aspects:
	- Inputs
	- Organization
	- Outputs
	Record the plan giving all details and also a Floor plan of the Layout of the unit