Department of B: Voc: (Food Processing Technology)

Programme outcomes

PO1: To provide judicious mix of skills relating to a profession and appropriate content of General Education:

PO2: To ensure that the students have adequate knowledge and skills, so that they are ready to work at each exit point of the programme:

PO3: To provide flexibility to the students by means of pre-defined entry and multiple exit points:

PO4: To integrate NSQF within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements: Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce: \

PO5: To provide vertical mobility to students coming out of 10+2 with vocational subjects:

F.Y (Food Processing Technology) Sem I (AUTONOUMOUS)

Course outcome for FPT01 Food Science (Credits 4)

CO1: Students will understand the basic concepts in food science and will get knowledge of the different food preparation methods:

CO2: They will understand the requirement of food with respect to energy, food and consumer safety, nutrients and their impact on health:

CO3: They will get the knowledge of nutritive value of cereals, pulses, nuts, fruits and vegetables, ant nutritional factors, germination of pulses, factors affecting cooking,

CO4: They will understand the processing of oilseeds, protein isolates, and Texturized vegetable protein

CO5: Students will acquire the knowledge of structure and nutritive value and chemical composition of eggs, fish and meat:

CO6: They will understand the importance and advantages of health food like probiotics, prebiotics,

organic food, nutraceuticals, and functional food

Course outcome for FPT02 Food Biochemistry (4 Credits)

CO1: Students will get knowledge of functional carbohydrates:

CO2: The will get knowledge regarding properties of fats and oil:

CO3: They will understand the concept of rancidity of oils and its importance in food industry,

CO4: They will be acquire knowledge of important protein sources in food:

CO5: Students will get knowledge regarding role of fibers in disease prevention:

CO6: They will have knowledge about different test used for estimation of protein in food industry

Course outcome for FPT03 Communication Skills and Personality Development (4 Credits)

CO1: Students will learn how to write abstract, technical articles and summarize

CO2: Students learn how a passage with intonation and voice modulation read

CO3: The will get knowledge regarding report writing and resume writing.

CO4: They will learn overall how to develop a good communication skills.

Course outcome for FPT04 Practical on Food Science (6 Credits)

CO1 : Students will understand the structure of starches, gelatinization of starches.

CO2: They will understand the processes like roasting, tenderization, caremalisation, inversion.

CO3: They will acquire the knowledge about handling different instruments used in food.

CO4: They will understand different changes occurred during frying of oil and smoke point of oil.

CO5: They will understand the importance of egg white foam and their different stages used in food industry.

Course outcome for FPT05 Practical on Food Biohemistry (6 Credits)

CO1: Students will get introduction different types of chemical reactions used for identification of carbohydrates

CO2. They will be able to estimate FFA content in given oil sample.

CO3. They will be able to perform estimation of ascorbic acid, protein and reducing sugar from food sample.

CO4. Students will learn how to write prepare different types of solutions.

CO5. Students learn about different methods of protein estimation.

CO6. Students learn about different methods of carbohydrate estimation.

CO7. They will learn different types of adulteration test used for fats and oils

Course outcome for FPT06 Practical on Communication Skills and Personality Development (6 Credits)

CO1. Students learn how to read a passage with intonation and voice modulation.

CO2. They will learn overall how to develop a good communication skills.

CO3. Students will develop good presentation skills.

CO4. Students will learn about how meetings and interview are conducted.

F.Y (Food Processing Technology) Sem II (AUTONOUMOUS)

Course outcome for FPT07 Food Processing Operations (4 credits)

CO1: Students will understand the basic concepts in food processing and engineering and will get knowledge of the different instruments used in food processing and engineering.

CO2: They will understand different unit operations used in food processing.

CO3: They will understand the basic of heat transfer and energy requirement in food industry, physical properties of water, water activity.

CO4: They will understand different preservation methods used in food processingCO5: They will learn different drying method and types of dryers.

CO6: They will acquire knowledge about freezing theory, different food freezers and quality offrozen food.

CO7: They will learn different designs and drawing of agitators, heat exchangers, evaporators and crystallizers.

Course outcome FPT08 Food Microbiology (4 Credit)

CO1: Students will understand the basic concepts in microbiology, principle and working of different instruments used in lab along with its application.

CO2:They will get the knowledge about the how bacteria grows, different factors which affect their growth, different requirements for bacterial growth, different isolation and purification methods used for bacteria

CO3: They will understand the principle and importance of different staining methods used for bacteria.

CO4: They will gain knowledge on different sources, types of bacteria that cause spoilage in food, various changes that occur during spoilage in food depending on their nutrient content.

CO5: Students will understand different methods that can be used to prevent and detect bacterial spoilage of food.

CO6: They will understand importance of fermentation and preservatives different methods and its importance.

Course outcome FPT09 Dairy Technology (4 Credit)

CO1: Students will understand composition of milk.

CO2: Students will get awareness regarding milk properties and microbial flora.

CO3: Students will be aware regarding processing technologies used in Dairy Industry

CO4: Student will be well versed with the milk and milk products.

Course outcome FPT10 Practical of Food Processing Operations (6 Credits)

CO1: Students will understand the physical, mechanical, textural and biochemical properties offoods.

CO2: They will understand the working of centrifugal separation and oil extraction method.

CO3: They will acquire the knowledge about microwave heating of food materials and effect of microwave on food material.

CO4: They will acquire the knowledge about drying of food materials. CO5:

They will understand freezing of food and effect of freezing on food.CO6:

They will understand the determination of firmness of foods.

Course outcome FPT11 Practical of Food Microbiology (6 Credits)

CO1: Students will understand the basic concepts in microbiology and they will understand the principle and working of different instruments used in microbiology lab along with its application. They will learn about different equipment's used in lab.

CO2: They will learn how to clean equipment's and sterilize them.CO3:

They will learn about handling of compound microscope.

CO4: They will understand different staining methods for bacteria and its importance.

CO5: They will understand difference between bacteria and fungi.

CO6: They will learn different methods used for isolation and enumeration of bacteria from food sample.

Course outcome FPT12 Practical of Dairy Technology (6 Credits)

CO1: Students will learn chemical analysis of milk.

CO2: Students will understand the concept of adulteration of milk.

CO3: Students will learn about Dairy plant layout and its importance

CO4: Student will be well versed with the processing technology milk and milk products.

Course outcome FPT 07: Post Harvest management of fruit and vegetables (4 credits)

CO1: to understand about different preservation techniques and its role in food industry.

CO2: to learn about processing of different fruits and preservation by preparation of different beverages, like RTS, squash, cordial, nectar, concentrate and fruit powder

CO3: to learn processing of jam, jelly, marmalade and defects in preparation of products.

CO4: to have in depth knowledge about drying and dehydration of fruit and vegetable.

CO5: to learn processing of tomato and different tomato products.

Course outcome FPT 08: Food Safety and Quality Control (4 Credit)

CO1: to understand microorganisms responsible for spoilage, assessment of food based on microbial quality, microbial assessment of foods..

CO2: to understand the basic of food safety, implementation of HACCP, importance of TQM in food industry, different ISO series and their uses, importance of auditing and accreditation in food industry

CO3: to have in depth knowledge regarding hazards present in foods.

CO4: understand concept of AGMARK, BIS

Course outcome FPT 09: Food Analysis (4 Credit)

CO1: understand different physical, chemical and rheological properties of foods.

CO2: understand the techniques of food analysis viz. gravimetric colorimetric, chromatographic with their working principles and application.

CO3: acquire knowledge about sensory attributes, facilities for sensory evaluation sensory evaluation methods of food.

CO4: learn about proximate analysis of foods and different instruments application

CO5: learn about sampling procedure and types of sampling, its uses for sensory evaluation.

Course outcome FPP 07: Practical on Post-Harvest management of fruit and vegetables (6 Credit)

CO1: will understand the preservation of fruits and vegetable by pickling.

CO2: will learn to preserve the fruit by sugar by preparing squash.

CO3: to understand the drying of fruit and vegetables

CO4: have knowledge control the enzymatic browning in fruit and vegetables by using different method like blanching, salt solution, acid solution, normal water solution, refrigeration

Course outcome FPP 08: Practical on Food Safety and Quality Control (6 Credit)

CO1: understand to prepare different types of media with its importance.

CO2: learn different methods for microbial examination in food sample and detection methods.

CO3: knowledge about water analysis, personal hygiene, surface analysis and methods used in it.

CO4: learn implementation of HACCP and ISO.

CO5: acquire knowledge of adulteration.

Course outcome FPP 09: Practical on Food Analysis (6 Credit)

CO1: understand preparation of various types of solutions.

CO2: understand about basic chromatographic principles.

CO3: handle various equipment's used food analysis.

CO4: learn about proximate analysis of foods and different instruments application

Course outcome FPT 10: Processing of Spices and Flavoring Agents (4 credits

CO1: understand the basic concepts, Production and processing scenario of spices, flavour & plantation crops and its scope in India.

CO2: understand the Major and Minor spices, herbs and leafy vegetables: processing and utilization.

CO3: understand about Spice oils, packaging of spices and processing of spice products, Separation, purification and identification of natural flavoring.

CO4: They will know Standards specification of spices and flavors.

Course outcome FPT 11: Food Packaging (4 credits)

CO1: understand basic concepts of food packaging, shelf life and evaluation of packaging.

CO2: learn about methods of packaging and types of packaging materials.

CO3: understand about legal and management aspects of packaging.

CO4: Evaluation of quality and safety of packaging materials and different testing procedures

Course outcome FPT 12: Computer Applications in Food Industry (4 credits)

CO1: will understand a brief history of computing, data processing and information, anatomy of computers, input and output devices and various types of memories.

CO2: learn about personal computers, types of processors, booting of computer, warm and cold booting, computer viruses, worms and vaccines

CO3: learn about Windows, MS Power Point and MS Word.

CO4: will learn E-Commerce.

Course outcome FPP 10: Practical on Processing of Spices and Flavoring Agents (6credits)

CO1: will understand the Identification and characterization of flavoring compounds of spices

CO2: acquire the knowledge about Packaging study of spices

CO3: understand preparation of curry powder and preparation of Indian Masala for different foods

CO4: gain a hands-on experience for preparation flavored oils and Preparation of various marinades.

Course outcome FPP 11: Practical on Food Packaging Technology (6credits)

CO1: understand about Identification of different types of packaging and packaging materials and measurement of thickness of packaging materials.

CO2: learn about performing destructive and non-destructive test on glass container.

CO3: study determination of shelf life of packaged foods and determination of ERH of foods.

CO4: learn about recent trends in food packaging.

Course outcome FPP 12: Practical on Computer Applications (6credits)

CO1: understand study of computer components; booting of computer and its shut down.

CO2: Practice of some fundamental DOS Commands.

CO3: They will study MS-Word, MS-Access, MSEXCEL and MS Power Point

CO4: will get introduced to f Computer Networking Tools and E-Commerce platform used in Food Industry

T.Y (Food Processing Technology) Sem V (SPPU)

Course Outcomes for FPT 13: Bakery And Confectionary Technology (4 Credits)

CO1: Students will understand the basic terms and concepts related to bakery and confectionary products.

CO2: Students will gain the knowledge related to various machineries used in bakery.

CO3: Learn the role of different ingredients in bakery products.

Co4: To know the manufacturing details of bakery and confectionary productsCo5:

Learn about the different parameters for setting up bakery unit.

Co6: Understand cost components like fixed cost and learn how to do the costing of the product

Course Outcomes for FPT 14: New Product Development (4 Credits)

CO1: Students will understand the concept of new product development, type of new product and need of new product development.

CO2: They will learn different objectives of creative product and innovative products, different stages involved in new product development like idea generation, idea screening, business analysis, product development and commercialization.

CO3: They will get knowledge about ingredients used for product development, quality and quantity of ingredients, cost of ingredients, nutritional composition of new product like (carbohydrates, protein, fat, minerals, fibers), standard specification as per laws and regulations for ingredients.

CO4: They will understand about sensory evaluation, need and impotence of sensory evaluation, methods of sensory evaluations, type of sensory evaluation, selection of panelist, result of sensory evaluation.

CO5: They will get the knowledge about product design and process development for the new product development, steps involved in product design, factors affecting on the product design, selection of prototype for product development.

CO6: will understand about the market strategy, selection of market for product launching, consumer testing by market survey.

CO7: They will learn the shelf life study of new product by using different test like physical, chemical and microbiological test of product, successful market testing and commercialization of new product in India.

Course Outcomes for FPT 15: Waste Management and Food Storage and Warehouse Technology (4 Credits)

CO1: Students will get introduction to waste produced in food industry and its managementmethods.

CO2: They will acquire knowledge regarding treatment methods for liquid waste treatment.

CO3: They will acquire knowledge about bio filters and ion exchange treatment of drinking water.

CO4: They will learn the methods for recovery of biological materials from different foodprocessing industry.

CO5: Student will learn about food storage, economics. Warehouse design and construction and material used for warehouse construction

CO6: They will understand types of storage and respective warehouse designs.

CO7: They will learn the Principles of supply chain management, documentation and management of warehouse contents.

Course Outcomes for FPP 13: Practical on Bakery and Confectionary (6 Credits)

CO1: Students will learn to prepare different types of bread like whole wheat bread, whitebread & understand the changes occur during baking.

CO2: Learn to prepare other baked products like pizza base, bread sticks. CO3:

Learn to prepare flour confectionary product like sponge cake, swiss roll.CO4:

Understand preparation technique for icing.

CO5: Learn to prepare skill based products like puff pastry. CO6:

Understand working of different equipment used in bakery.CO7:

Understand working of different types of ovens.

Course Outcomes for FPP 14: Practical on New Product Development (6 Credits)

CO1: Students will understand the how to generate new product ideas, product concept and product design. They will learn preparation of new product by using different processing methods.

CO2: They will learn ingredients technology, limits of ingredients, benefits of ingredients, preparation of new product having a good nutritional value.

CO3: They will understand the prototype development, specification of products, and standard

procedure for new product development.

CO4: They will acquire knowledge about sensory evaluation, type of sensory evaluation, use of sensory evaluation, and sensory evaluation of processed product.

CO5: They will learn shelf life study of new product, test of quality parameters, and physical, chemical and microbiological test of product.

Course Outcomes for FPP 14: Practical on New Product Development (6 Credits)

CO1: Students will learn about how to search research articles and reviews related to particular food products.

CO2: They will learn how to implement their ideas in innovative product development.

CO3: They will understand the process of product standardization.

CO4: They will learn the quality control of products.

CO5: They will learn about cost estimation, sales and marketing of food products.

CO6: They will learn about maintenance of different equipment's and their standardization.

CO7: They will understand about different food laws, different certifications required for food industry.

CO8: They will learn about how auditing and accreditation is carried out.

CO9: They will acquire knowledge about packaging material testing and their use in different food products.

CO10: will learn about nutritional labeling of food products.

CO11: They will understand how to maintain data and carryout statistical analysis of food products.

T.Y (Food Processing Technology) Sem VI (SPPU)

Course Outcomes for FPT 16: Meat, Fish and Poultry Technology (4 Credits)

CO1: Students will understand the basic of meat, fish and poultry processing and importance of meat processing for entrepreneurship development.

CO 2: They will learn different meat processing and preservation methods.

CO3: They will understand about principles of fish processing and different fish processing methods.

CO4: They will get the knowledge about different quality parameters of fish suitable for

processing.

CO5: They will understand different methods of poultry processing and quality parameters of poultry.

CO6: They will learn importance of egg production and different egg preservation methods such as pickling and canning.

Course Outcomes for FPT 17: Entrepreneurship Development and Business Management (4 Credits)

CO1: Students will get introduction to management author's and their contribution. CO2: They will acquire knowledge regarding functions of management in detail.

CO3: They will acquire knowledge about various leadership style and motivational techniques used in an organization. They will be aware about sexual harassment

CO4: Students will understand the basic concepts of Entrepreneurship, and Need for entrepreneurship.

CO5: They will understand the Proprietary, Partnership and Group Entrepreneurship.

CO6: They learnt about the entrepreneurs in shadows, failed entrepreneurship, new internet entrepreneurs.

CO7: They learnt about the entrepreneurial values and attitudes, entrepreneurial qualities, role demands, requirements of entrepreneurs and barriers to entrepreneurship.

Course Outcomes for FPT 18: Food Laws and Regulation (4 Credits)

CO1: Student will learn the need for food standards and their enforcement

CO2: They will learn Various types of laws- Mandatory/Regulatory and Voluntary/Optional

CO3: They will learn various food laws (Mandatory) - Food Safety and Standards Act, 2006 (FSSA), Edible Oils Packaging (Regulation) Order etc.

CO4: They will learn Voluntary/Optional-Agmark Standards (AGMARK), Codex Alimentarius Standards, BIS Standards and Specifications, Consumer Protection Act, 1986.

CO5: Establishment of Food Safety and Standards Authority of India (FSSAI) (II) and functions of the chairperson and other members of FSSAI

CO6: Student will learn the establishment and Functions of Central Advisory Committee, Scientific Panels, Scientific Committees. Duties and functions of Food Authority

Course Outcomes for FPP 16: Practical on Meat, Fish and Poultry Technology (6 Credits)

CO1: Students will understand the survey of different meat processing industries and different processed products from meat, fish and poultry.

CO2: They will understand the slaughtering process and cleaning and sanitation of meat and meat plant.

CO3: They will acquire the knowledge about different preservation methods such as canning and pickling.

CO4: They will acquire the knowledge about how to check quality of fish for processing.CO5:

They will understand how to produce fishmeal protein and fishmeal powder.

They will understand the processing of chicken and test quality.CO6:

They will learn the process of canned egg pickle.

Course Outcomes for FPP 17: Practical on Entrepreneurship Development (6 Credits)

CO1: Students will understand the basic concepts of Entrepreneurship, and Need for entrepreneurship.

CO2: They will understand the Proprietary, Partnership and Group Entrepreneurship.

CO3: They will understand the exploring the world of entrepreneurs.

CO4: They learnt about the entrepreneurs in shadows, failed entrepreneurship, new internet entrepreneurs.

CO5: They learnt about the entrepreneurial values and attitudes, entrepreneurial qualities, role demands, requirements of entrepreneurs and barriers to entrepreneurship.

Course Outcomes for FPP 18: Project (6 Credits)

CO1: Students will learn about how to search research articles and reviews related to particular food products.

CO2: They will learn how to implement their ideas in innovative product development.

CO3: They will understand the process of product standardization.

CO4: They will acquire knowledge about sensory evaluation methods used in industry.

CO5: They will learn about cost estimation, sales and marketing of food products.

CO6: They will learn about maintenance of different equipment's and their standardization.

CO7: They will understand about different food laws, different certifications required for food industry.