MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY BATHINDA-151001 (PUNJAB), INDIA

(A State University Estb. by Govt. of Punjab vide Punjab Act No. 5 of 2015 and Approved u/s 2(f) & 12 (B) of UGC; Member AIU)

Department: **Food science and Technology**
MRSPTU, Bathinda

Program: M.Sc. (Food science and Technology)

COs, POs, PSOs Mapping

Subject: Principles of Food Preservation	**Subject Code:** MFOT1-101	**Semester: 1st**
Credit: 4	**L T P 40 0**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting knowledge on the causes of food spoilage and principles of food preservation	3	0	0	0	0	2	0	0	0	0	0	0	1		
CO2	**CO2** Understanding the applications of basic and advanced equipments used for food preservation	0	0	0	0	3	0	0	0	0	0	0	0			3
CO3	CO3 Creating the awareness about limits of chemical preservatives safe for human consumption.	0	0	0	0	0	3	0	0	0	2	0	0			
CO4	CO4 Analyzing the effectiveness of novel preservation techniques over traditional methods with respect to food and environment.	0	0	2	0	0	0	1	0	0	0	0	0		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: **Basic Food microbiology**	**Subject Code:** MFOT1-102	**Semester:** **1st**
Credit: **4**	**L T P** **400**	**Duration:** **60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Applying the knowledge of HACCP and food safety to prevent the growth of microbes in foods.	2	0	0	0	0	3	0	0	0	0	0	0	1		1
CO2	CO2 Detection of food borne pathogens using novel techniques of analysis	0	0	0	0	2	2	0	0	0	0	0	0			2
CO3	CO3 Evaluating the factors encouraging and restricting the growth of microbes in foods	0	0	0	0	0	2	0	0	0	0	0	0	1		1
CO4	CO4 Analyzing the role of pathogens in food borne illnesses	0	0	0	0	0	2	0	0	0	0	0	0		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Chemistry	**Subject Code** MFOT1-103	**Semester: 1st**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting the knowledge of chemical composition of food.	3	0	0	0	0	0	0	0	0	0	0	0	3		
CO2	CO2 Understanding the harmful effects of allergens and toxic constituents of foods on human health.	0	0	0	0	0	3	0	0	0	0	0	0		3	
CO3	CO3 Analysing the factors affecting nutritional composition of food.	0	1	0	0	0	2	0	0	0	0	0	0			
CO4	CO4 Evaluating the processes leading to desirable and undesirable changes occurring in food	0	0	3	0	0	2	0	0	0	0	0	0			2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Analysis and Instrumentation Lab-I	**Subject Code** MFOT1-104	**Semester: 1st**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Understanding the nutritional composition of food	3	0	0	0	0	2	0	0	0	0	0	0	3		
CO2	CO2 Application of novel techniques in food analysis	0	0	0	0	3	0	0	0	0	0	0	0			2
CO3	CO3 Evaluating the quality parameters of food products to ensure food safety and public health	0	0	0	0	1	3	0	0	0	0	0	0		3	
CO4	CO4 Analysis of proximate composition of food products	0	0	0	0	1	2	0	0	0	0	0	0			

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Microbiology Lab-II	**Subject Code** BFOTS1-105	**Semester: 1st**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting the knowledge of media preparation, staining methods and handling practices	3	0	0	0	1	0	0	0	0	0	0	0	3		
CO2	CO2 Application of microbial tools and techniques for detection of spoilage microorganisms	0	0	0	0	3	1	0	0	0	0	0	0			3
CO3	CO3 Analyzing the microbial load of different food products to determine their safety for human consumption.	0	0	0	0	0	3	0	0	0	0	0	0		3	
CO4	CO4 Evaluating the growth curve of microbes in relation to its effect on food quality.	0	3	0	1	0	0	0	0	0	0	0	0		1	1

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Nutraceutical and Functional Foods	**Subject Code** MFOT1-156	**Semester: 1st**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting the knowledge of nature, types, and scope of nutraceutical and functional foods.	3	0	0	0	0	0	0	0	0	0	0	0	2		
CO2	CO2 Application of nutraceutical and functional foods for the treatment of various disorders	0	0	0	0	0	3	0	0	0	0	0	0		2	
CO3	CO3 Creating the ability of effective communication with society regarding therapeutical effects of nutraceutical and functional foods.	0	0	0	0	0	2	0	0	0	3	0	0			
CO4	CO4 Evaluating the functionality of nutraceutical compounds with respect to their stability and shelf life	0	0	1	0	0	1	0	0	0	0	0	0			2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Nutrition and Health	**Subject Code** MFOT1-157	**Semester: 1st**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting knowledge about basic terminology of nutrition and different functions of food.	3	0	0	0	0	2	0	0	0	0	0	0	2		
CO2	CO2 Application and role of foods to address various health issues.	3	0	0	0	0	0	0	0	0	0	0	0		3	
CO3	CO3 Creating the awareness regarding social, cultural and physiological aspects of foods.	0	0	0	0	0	3	0	0	0	1	0	0			
CO4	CO4 Analyzing the nutritional requirements for different age groups.	0	1	0	0	0	3	0	0	0	0	0	0			

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Basic Food Engineering	**Subject Code** MFOT1-206	**Semester: 2nd**
Credit: 4	**L T P 004**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting knowledge about basic terminology of nutrition and different functions of food.	3	0	0	0	0	2	0	0	0	0	0	0	2		
CO2	CO2 Application and role of foods to address various health issues.	3	0	0	0	0	0	0	0	0	0	0	0		3	
CO3	CO3 Creating the awareness regarding social, cultural and physiological aspects of foods.	0	0	0	0	0	3	0	0	0	1	0	0			
CO4	CO4 Analyzing the nutritional requirements for different age groups.	0	1	0	0	0	3	0	0	0	0	0	0			

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of Cereals and Millets	**Subject Code** MFOT1-207	**Semester: 2nd**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting the knowledge of structure and chemical composition of different cereal grains.	3	0	0	0	0	1	0	0	0	0	0	0	2		
CO2	CO2 Application of techniques and machineries for the quality assessment of cereal grains and their products.	0	0	0	0	3	0	0	0	0	0	0	0			3
CO3	CO3 Analyzing the role of ingredients in development of food products from different cereal grains.	0	0	3	0	0	0	0	0	0	0	0	0	1		
CO4	CO4 Understanding the utilization of by-products of milling and formulation of convenience foods for sustainable development.	0	0	0	0	0	0	3	0	0	0	0	0		1	2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Computer fundamentals and Statistics	**Subject Code** MFOT1-208	**Semester: 2nd**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting the basic knowledge of computer, number system and computer networks.	3	0	0	0	0	0	0	0	0	0	0	0	2		
CO2	CO2 Application of software packages for making reports, documents and effective presentations.	0	0	0	0	0	0	0	0	0	3	0	0	2		
CO3	CO3 Analysis and interpretation of data using statistical techniques.	0	0	0	3	0	0	0	0	0	0	0	0			1
CO4	CO4 Understanding the types and functions of different hardware and software devices for better project management	2	0	0	0	0	0	0	0	0	0	3	0		1	
CO5	CO1 Imparting the basic knowledge of computer, number system and computer networks.	3	0	0	0	0	0	0	0	0	0	0	0	2		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Chemistry	**Subject Code** BFOTS1-204	**Semester: 2nd**
Credit: 4	**L T P 3 10**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	**CO.1** Understanding the chemical structure of food components in relation to shelf life and nutritional value of food products	3												3		
CO2	**CO.2** Identifying the suitable methods for the production of novel food products.				3											3
CO3	**CO.3** Imparting the knowledge of physicochemical properties of food among students.	2												3		
CO4	**CO.4** Creating the awareness about the functions of various food components.							2								2
CO5	**CO.5** Remembering the concept of minerals and vitamins associated with human health for various life long benefits.						3									1

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of cereals,Pulses and Oilseeds Lab III	**Subject Code** MFOT1-209	**Semester: 2nd**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting knowledge of proximate composition of flours from different cereal grains.	3	0	0	0	0	1	0	0	0	0	0	0	3		
CO2	CO2 Understanding the mode of working in industrial setup as an individual and as a team.	0	0	0	0	0	0	0	0	3	0	0	0		2	
CO3	CO3 Evaluation of different properties of cereal starches using modern techniques.	0	0	0	0	3	0	0	0	0	0	0	0			3
CO4	CO4 Analysis of quality attributes of cereal grains so as to meet legal specifications.	0	0	0	0	0	3	0	0	0	0	0	0		1	1

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of Beverages	**Subject Code** MFOT1-258	**Semester: 2nd**
Credit: 4	**L T P 004**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting the knowledge of types and importance of beverages.	3	0	0	0	0	2	0	0	0	0	0	0	2		
CO2	CO2 Understanding the technology behind processing of different beverages to meet the legal specifications.	0	0	0	0	2	2	0	0	0	0	0	0			1
CO3	CO3 Application of low calorie sweeteners for preparation of beverages to address the specified needs of consumers.	0	0	2	0	0	2	0	0	0	0	0	0			
CO4	CO4 Creating awareness to communicate regarding safety levels of additives used in beverage preparation along with quality standards of bottled water.	0	0	0	0	0	2	0	0	0	3	0	0			1

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of Malting and Brewing	**Subject Code** MFOT1-259	**Semester: 2nd**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting the basic knowledge of production, trade, structure and composition of barley.	3	0	0	0	0	2	0	0	0	0	1	0	2		
CO2	CO2 Application of malt for development of different food products.	0	0	3	0	0	0	0	0	0	0	0	0			2
CO3	CO3 Quality evaluation of ingredients involved in production of beer.	0	0	0	0	2	1	0	0	0	0	0	0			3
CO4	CO4 Understanding the techniques involved in processing and quality assessment of beer.	0	0	0	0	3	1	0	0	0	0	0	0			

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Biotechnology	**Subject Code** MFOT1-259	**Semester: 2nd**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting the knowledge of basic principles of genetic engineering with respect to food.	3	0	0	0	0	0	0	0	0	0	0	0	3		
CO2	CO2 Understanding the applications of bacteriocins in food systems along with their safety levels.	0	0	0	0	0	3	0	0	0	0	0	0		3	
CO3	CO3 Creating awareness of bioethics in food biotechnology.	0	0	0	0	0	0	0	3	0	1	0	0		2	
CO4	CO4 Application of novel processes and techniques for improvement in various foods.	0	0	3	0	0	1	0	0	0	0	0	0			3

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Additives	**Subject Code** MFOT1-260	**Semester: 2nd**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting knowledge of types and functions of different food additives.	3	0	0	0	0	2	0	0	0	0	0	0	3		
CO2	CO2 Understanding the limitations of application of food additives in food products.	0	0	0	0	1	2	0	0	0	0	0	0		3	
CO3	CO3 Creating awareness regarding use of food additives and their permissible limits.	0	0	0	0	0	3	0	0	0	1	0	0		2	2
CO4	CO4 Applications of recent advances in additives in context to different food attributes.	0	0	2	0	1	0	0	0	0	0	0	0			

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of fruits and Vegetables	**Subject Code** MFOT1-310	**Semester: 3rd**
Credit: 4	**L T P 4 00**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting knowledge about classification and nutritional value of fruits and vegetable.	3	0	0	0	0	2	0	0	0	0	0	0	3		
CO2	CO2 Application of appropriate techniques and modern machineries for the production of quality products from fruits and vegetable.	0	0	0	0	3	2	0	0	0	0	0	0			3
CO3	CO3 Creating awareness about spoilage in fruits and vegetables to avoid the occurrence of food borne illnesses.	0	0	0	0	0	3	0	0	0	2	0	0		3	
CO4	CO4 Development and utilization of by products from fruits and vegetables waste to address the environmental concerns.	0	0	1	0	0	0	3	0	0	0	0	0		3	2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of Fruits and Vegetables Lab-V	Subject Code	Semester: 3rd
Credit: 2	L T P 4 00	Duration: 30 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Applying theoretical knowledge for the production of value added products meeting the specified needs of society			2			3									3
CO2	**CO.2** Evaluating the quality of food products using basic and advanced equipments.					3										
CO3	**CO.3** Developing food preserves to enhance the shelf life along with reduction in wastage of perishable foods			3				1								
CO4	**CO.4** Reducing environmental stress by utilizing by-products of fruit and vegetable industry by converting them into attractive food products.			2				3								2
CO5	**CO.5** Creating an ability to share views related to a food industry and their management during industrial visits										3				3	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Unit Operations in Food Engineering	**Subject Code** MFOT1-311	**Semester: 3rd**
Credit: 4	**L T P 4 00**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting knowledge of preliminary unit operations.	3	0	0	0	0	0	0	0	0	0	0	0	3		
CO2	CO2 Understanding the principles of food engineering and apply these to manage the projects ijn industrial set ups.	0	0	0	0	0	0	0	0	0	0	2	0		2	
CO3	CO3 Creating awareness regarding selection and application of tools and techniques used for the production and storage of foods.	0	0	0	0	3	0	0	0	0	1	0	0			3
CO4	CO4 Formulate and analyze the complex problems of unit operations used in food engineering	0	3	0	1	0	0	0	0	0	0	0	0			

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of Fruits and Vegetables Lab IV	**Subject Code** MFOT1-313	**Semester: 3rd**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting knowledge regarding extraction of juices and preparation of products from fruits and vegetables.	3	0	0	0	0	2	0	0	0	0	0	0			2
CO2	CO2 Creating awareness about quality assessment of products for production of quality food.	0	0	0	0	0	3	0	0	0	1	0	0			2
CO3	CO3 Analyzing the microbiological parameters of the products to meet the safety standards.	0	0	0	0	0	3	0	0	0	0	0	0		2	
CO4	CO4 Evaluating the cost of food products for better management of finance in one's own work and industrial set ups.	0	0	0	0	0	0	0	0	0	0	3	0		1	2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Packaging Lab-V	**Subject Code** MFOT1-314	**Semester: 3rd**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Identification of different packaging materials as per the requirements of food products using principles of food packaging.	3	0	0	0	0	0	0	0	0	0	0	0	1		
CO2	CO2 Understanding the application of novel food packaging techniques.	0	0	0	0	3	0	0	0	0	0	0	0		2	1
CO3	CO3 Evaluating the quality of packaged food products so as to provide safe food for consumption.	0	0	0	0	2	3	0	0	0	0	0	0			2
CO4	CO4 Analyzing the physical parameters of packaging materials to meet the legal specifications.	0	0	0	0	0	2	0	0	0	0	0	0		1	2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Standards and Quality Assurance	Subject Code	Semester: 3rd
Credit: 3	L T P 300	Duration: 45 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting knowledge of concepts of food quality and assurance.	3	0	0	0	0	2	0	0	0	0	0	0	3		
CO2	CO2 Understanding the laws and regulation in relations to food quality and safety.	0	0	0	0	0	3	0	0	0	0	0	0		3	
CO3	CO3 Applications of good hygiene and good laboratory practices with respect to environmental considerations.	0	0	0	0	0	0	3	0	0	0	1	0		2	
CO4	CO4 Creating awareness about various sampling techniques and analysis of data using statistical quality control	0	3	0	0	0	0	0	0	0	1	0	0	1		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of Pulses and oilseeds	**Subject Code** MFOT1-363	**Semester: 3rd**
Credit: 0	**L T P 300**	**Duration: 45 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting knowledge about importance of fats and oils in human nutrition.	3	0	0	0	0	2	0	0	0	0	0	0	1		
CO2	CO2 Understanding the importance of oilseed processing and applying these to one's own work and in industrial setups.	0	0	0	0	0	0	0	0	0	0	3	0		1	2
CO3	CO3 Creating awareness about selection and application of techniques and machineries in milling and extraction processes.	0	0	0	0	3	0	0	0	0	1	0	0			3
CO4	CO4 Demonstrating knowledge about anti-nutritional factors and their modes of elimination so as to ensure public health.	3	0	0	0	0	3	0	0	0	0	0	0		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: **TECHNOLOGY OF EGG, MEAT, FISH AND POULTRY**	**Subject Code** MFOT1-415	**Semester:** **4th**
Credit: **4**	**L T P 400**	**Duration:** **60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting knowledge about composition and nutritional value of meat, fish and poultry.	3	0	0	0	0	2	0	0	0	0	0	0	3		
CO2	CO2 Applying ethical principles in various practices involved in slaughtering of animals.	0	0	0	0	1	0	0	3	0	0	0	0	1		
CO3	CO3 Evaluation of internal and external quality parameters of egg to ensure safety for consumption.	0	0	0	0	2	0	0	0	0	0	0	0		3	3
CO4	CO4 Creating awareness regarding utilization of by products from meat industry in context to environment.	1	0	0	0	0	0	3	0	0	0	0	0		2	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Egg, Poultry and Meat Technology	Subject Code	Semester: 4th
Credit: 4	L T P 400	Duration: 60 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Providing the knowledge of structure and composition of different meat and meat products.	3												3		
CO2	**CO.2** Understanding the techniques used for conversion of eggs into different products and their impact on different food components.			3				2								3
CO3	**CO.3** Applying the ethical principles during handling of animal and their conversion into meat for developing different meat products.								3					2		
CO4	**CO.4** Imparting the knowledge of different quality evaluation methods for meat and meat products.	3				3										
CO5	**CO.1** Providing the knowledge of structure and composition of different meat and meat products.	3												3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of Milk and Milk Products	**Subject Code** MFOT1-416	**Semester: 4th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting knowledge about composition, nutritive value and processing of milk and milk products.	3	0	0	0	0	2	0	0	0	0	0	0	3		
CO2	CO2 Understanding the microbiological quality of fresh milk to ensure its safety for human consumption and processing.	0	0	0	0	0	3	0	0	0	0	0	0		2	2
CO3	CO3 Cost effective utilization of by-products of dairy industry to address the environmental concerns.	0	0	0	0	0	0	2	0	0	0	3	0			2
CO4	CO4 Creating awareness about scope, strengths and opportunities of dairy industry and its implementation to become entrepreneur.	0	0	0	0	0	0	0	0	0	2	3	0		1	
CO5	CO1 Imparting knowledge about composition, nutritive value and processing of milk and milk products.	3	0	0	0	0	2	0	0	0	0	0	0	3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food analysis and Instrumentation	**Subject Code** MFOT1-417	**Semester: 4th**
Credit: 3	**L T P 300**	**Duration: 45 Hrs.**

COs	**Statement**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	CO1 Imparting knowledge about proximate analysis of food products.	3	0	0	0	1	0	0	0	0	0	0	0	1		2
CO2	CO2 Understanding the selection and application of appropriate modern techniques for quality assessment of foods.	0	0	0	0	3	0	0	0	0	0	0	0			1
CO3	CO3 Creating awareness regarding sampling techniques, statistical analysis and interpretation of data along with expression of results.	0	3	0	3	0	0	0	0	0	1	0	0	1		
CO4	CO4 Application of novel methodologies for microbial load analysis of food to ensure safety for consumption	0	0	0	0	3	2	0	0	0	0	0	0		2	1
CO5	CO1 Imparting knowledge about proximate analysis of food products.	3	0	0	0	1	0	0	0	0	0	0	0	1		2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Technology of Animal Products Lab VI	Subject Code MFOT1-418	Semester: 4th
Credit: 2	L T P 004	Duration: 30 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO1 Imparting knowledge development of various processed foods from animal products.	3	0	2	0	0	0	0	0	0	0	0	0	1		
CO2	CO2 Understanding the mode of working in industrial setup as an individual and as a team.	0	0	0	0	0	0	0	0	3	0	0	0		1	
CO3	CO3 Evaluation of microbiological quality of milk and milk products to ensure their safety for consumption.	0	0	0	0	3	2	0	0	0	0	0	0			3
CO4	CO4 Analysis of quality parameters of animal products so as to meet the legal specifications	0	0	0	0	3	2	0	0	0	0	0	0		1	3

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Food Plant Hygiene and Sanitation Lab IX	Subject Code	Semester: 4th
Credit: 2	L T P 004	Duration: 30 Hrs.

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Understanding the working and principles of various equipments used to determine the safety of food.					3										2
CO2	**CO.2** Imparting knowledge regarding safety standards of various food products along with their analysis.					2	2									2
CO3	**CO.3** Identifying various problems related to food safety with the help of appropriate techniques and conclude their solutions		3													2
CO4	**CO.4** Developing the spirit of team work during sample collection from various sites in the university.									3					3	
CO5	**CO.5** Understanding the impact of different processing techniques on water and environment.							3								2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject: Nutraceutical and Functional Foods	**Subject Code**	**Semester: 4th**
Credit: 4	**L T P 404**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Understanding the concept of nutraceutical and functional food and their associated health benefits.	3					2							2		
CO2	**CO.2** Familiarize the students about the functions of various types of nutraceutical compounds, sources and their role in promoting human health						3									2
CO3	**CO.3** Creating the knowledge of various sources of function foods and their potential for use in improving human health.			3											2	
CO4	**CO.4** Imparting the knowledge of fermented foods and their role in various harmful diseases.	2			1									1		2
CO5	**CO.5** Aware the students about the future prospects of various health promoting foods and their potential for use in promoting human health.		2				2									2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject Nutraceutical and functional foods Lab X	**Subject Code**	**Semester: 4th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Creating the ability to understand about various nutraceuticals and functional foods available in the market and their associated health benefits.	3														2
CO2	**CO.2** Familiarize the students with the approach behind development of nutraceuticals and functional foods.			2			3									2
CO3	**CO.3** Aware the students about analysis of compounds responsible for imparting nutraceutical properties to the food product.				3											
CO4	**CO.4** Imparting the knowledge about formulation and development of various nutraceutical and functional foods.			3										1		2
CO5	**CO.5** Applying various estimation techniques to determine different components present in food.					3										3

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Bakery Technology	**Subject Code**	**Semester: 4th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Familiarize the students with current scenario and economic importance of Bakery Industry in India.	3												2		
CO2	**CO.2** Aware the students with different categories of bakery products and their possible uses.	2					3							2		
CO3	**CO.3** Understanding the concept and techniques required for formulation of different bakery products.			3												3
CO4	**CO.4** Impart the knowledge of different ingredients used and their role in the bakery products formulation					3										2
CO5	**CO.5** Providing knowledge about the development to modified bakery products with special needs.			3			2									3

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Bakery Technology Lab XI	**Subject Code**	**Semester: 4th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Applying the knowledge of food microbiology to assess the quality of baked products.	2	2		2									2		
CO2	Selecting ingredients for the development of various baked products by ensuring their safety to the allergic persons.				3									2		
CO3	Selection of suitable equipments and techniques for the development of quality products.						3									3
CO4	Applying theoretical knowledge for the development of attractive baked products with better taste as per the legal standards.							3								2
CO5	Developing an ability to work in a team efficiently by awaring them about the practical problems of a bakery industry.										3					3

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Unit Operations in Food engineering	**Subject Code**	**Semester: 5th**
Credit: 4	**L T P 310**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Understanding the concept of unit operation and various preliminary unit operations required for material handling.	3				1								3		
CO2	**CO.2** Understanding the principles and working of equipments used in food industries.					3										3
CO3	**CO.3** Formulate and analyze the problems related to unit operations used in food engineering.		3													
CO4	**CO.4** Creating awareness regarding selection and application of tools and techniques used for the processing and storage of foods.					3						1				2
CO5	**CO.1** Understanding the concept of unit operation and various preliminary unit operations required for material handling.	3				1								3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Food Packaging	**Subject Code**	**Semester: 5th**
Credit: 4	**L T P 310**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Imparting knowledge regarding importance of packaging in foods.	3												2		
CO2	**CO.2** Understanding of various environmental concerns related to food packaging.						2	3								1
CO3	**CO.3** Creating awareness regarding novel methods of food packaging.			2							1					2
CO4	**CO.4** Selection and application of appropriate packaging materials and techniques depending on the requirements of food products.					3										2
CO5	**CO.5** Understanding of different types of packaging materials used in food packaging	3					1					1		2		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Sugar and Confectionary Technology	**Subject Code**	**Semester: 5th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Imparting the knowledge regarding manufacturing and deterioration of sugar.	3					2							3		
CO2	**CO.2** Understanding of icings, toppings and confectionary.	2										1		2		
CO3	**CO.3** Utilization of by-products of sugar industry.							3								2
CO4	**CO.4** Creating awareness regarding processing methods of cocoa and chocolate used in food industries.					2					1					2
CO5	**CO.5** Understanding various defects of chocolate.	2					1					1				

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Food Packaging Lab XII	**Subject Code**	**Semester: 5th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Imparting knowledge about testing of physic-mechanical parameters of packaging materials.	3										2				
CO2	**CO.2** Understanding of principle and working of FFS machine.	2				3								2		
CO3	**CO.3** Creating awareness about the recent advances in food packaging					3					2			2		
CO4	**CO.4** Analyzing the effect of packaging on shelf life to food products in order to ensure food safety.						3					1				2
CO5	**CO.5** Quality assessment of packaged food products					2	2					1				

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Sugar and confectionary Technology Lab XIII	**Subject Code**	**Semester: 5th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1** Imparting knowledge about manufacturing of sugar and confectionary based products.	3														2
CO2	**CO.2** Students become aware about manufacturing of confectionary products.			2							1					2
CO3	**CO.3** Evaluation of various quality parameters of confectionary products.						3									
CO4	**CO.4** Understanding the mode of working in industrial setup as an individual and as a team.											3	1		2	
CO5	**CO.5** Understanding of various types of packaging materials used for confectionary.	3														1

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Spices and Flavor Technology	**Subject Code**	**Semester: 5th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1**Imparting knowledge classification, composition and uses of spices and flavors.	3					1							3		
CO2	**CO.2**Understanding about processing techniques of spices.					3										2
CO3	**CO.3**Understanding of flavoring compounds, its classification and its application in food industries	3										2		2		
CO4	**CO.4**Creating awareness about microbial contamination and insect infestation in spices and its control.						3				2	1				
CO5	**CO.5**Analyzing the role of flavorings and their stability during processing.		1				1					2				

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Spices and Flavor Technology lab XIV	**Subject Code**	**Semester: 5th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1**Imparting knowledge of proximate composition of spices.	3												3		
CO2	**CO.2**Understanding of adulteration in spices.					1	3							1		
CO3	**CO.3**Evaluation of organoleptic properties of spices for their appropriate use in food products.					1						2				3
CO4	**CO.4** Analysis of microbiological quality of spices to ensure their safety for human consumption					1	3					1				3
CO5	**CO.5**Quality assessment of different spices.					2	1					1				

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Technology of Oils and Fats	**Subject Code**	**Semester: 5th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1**Imparting knowledge of nutritional importance of fats and oils in human nutrition.	3					2							3		
CO2	**CO.2**Understanding the extraction and processing techniques of fats and oils used at home and industrial scale.					3						1				2
CO3	**CO.3** Analyzing the physico-chemical properties of oils and fats for their suitability in food products					2						1				2
CO4	**CO.4**Creating awareness about factors affecting the storage of fats and oils from the safety point of view.						3				2	1				1
CO5	**CO.1**Imparting knowledge of nutritional importance of fats and oils in human nutrition.	3					2							3		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Technology of Oils and Fats Lab XV	**Subject Code**	**Semester: 5th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1**Imparting knowledge about physic-chemical properties of fats and oils.	3												3		
CO2	**CO.2**Understanding of adulteration in fats and oils.	3					2							1		
CO3	**CO.3** Evaluation of organoleptic properties of fats and oils for their appropriate use in food products.					3	2					1				2
CO4	**CO.4**Analysis of quality parameters of fats and oils to ensure their safety for human consumption.					2						2				2
CO5	**CO.5**Understanding of various processing methods used at industrial scale.													1	1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : **Basic Food Engineering**	**Subject Code**	**Semester: 6th**
Credit: 4	**L T P 310**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1**Familiarize students with the basic concepts of food engineering including units and dimensions	3												3		
CO2	**CO.2**Understanding the basic principles, processes and components of material and energy balances		2											2		
CO3	**CO.3**Providing the knowledge about thermodynamic system and its different properties			1										2		
CO4	**CO.4**Aware students about principles of fluid flow and its effect in food processing.						2									2
CO5	**CO.5** Interpretation of data using psychrometry and synthesis of information for developing appropriate storage and processing conditions.				3											

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Food and Nutrition	**Subject Code**	**Semester: 6th**
Credit: 4	**L T P 310**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1**Understanding the concepts of relationship between food, nutrition and health.	3												2		
CO2	**CO.2**Aware students about various nutrients, their classifications and functions associated with the human health.						2							1		1
CO3	**CO.3**Familiarize students with the concept of RDA and its importance in maintaining the health.			2										1		1
CO4	**CO.4**Imparting the knowledge of importance of meal planning in diet for different group of people.			2			2							1		
CO5	**CO.5** To create the awareness about FSSAI guidelines used for nutritional labelling in India.						2									2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Sensory Evaluation of Food	**Subject Code**	**Semester: 6th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**CO.1**Aware students about structure and functions of taste organs.	2												3		
CO2	**CO.2**Providing the knowledge about taste measurements and taste abnormalities		2													1
CO3	**CO.3**Familiarize the students with the importance of odour, flavor and colour in sensory evaluation of food.						2							1		
CO4	**CO.4**Understanding the importance of texture and texture perception in food.				2											
CO5	**CO.5**Application of different types of equipment used for sensory evaluation of food.					3										2

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Sensory Evaluation of Food Lab XVI	**Subject Code**	**Semester: 6th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO.1 Creating awareness among students about the importance of sensory panel.	3												1		
CO2	CO.2 Provide practical knowledge of various sensory tests.						2									1
CO3	CO.3 Conducting various tests for sensory evaluation of different food products.						2									1
CO4	CO.4 Familiarize students with various quality tests for milk products, cereals and confectionary products**.**					2										1
CO5	CO.5 Imparting the knowledge about qualitative tests for various oils and fats					2										

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : **Food Plant layout**	**Subject Code**	**Semester: 6th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO.1 Provide knowledge about concepts of designing and importance of a good layout.	1			2									1		
CO2	CO.2 Imparting the knowledge about importance of plant site and location factors.		2													
CO3	CO.3 Familiarize the students about the selection of plant building material and equipment's.															
CO4	CO.4 Creating the awareness about layout symbols among students.													1		
CO5	CO.1 Provide knowledge about concepts of designing and importance of a good layout.	1			2									1		

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Food Plant layout Lab XVII	**Subject Code**	**Semester: 6th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO.1 Preparing the layouts for different processing plants.	3													1	
CO2	CO.2 Familiarizing the students about process diagrams of various manufacturing units.					2									1	
CO3	CO.3 Imparting the knowledge about calculations related to processing cost.											2			1	
CO4	CO.4 Creating the awareness among students about the processes to calculate the life of various machines and equipments in the plant.					2						2			1	
CO5	CO.5 Synthesize the information about the shelf life estimation of various machines.		2												1	

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Food Safety	**Subject Code**	**Semester: 6th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO.1 Aware students about food safety and importance of food safety.	3												3		
CO2	CO.2 Understanding the concept of Hygiene and Sanitation in Food Service Establishments and their association with food safety.						2									2
CO3	CO.3 Familiarize the students about various food hazards and its impact on health.			1			2									1
CO4	CO.4 Providing knowledge about food safety tools and their need for food quality.					3						2				1
CO5	CO.5 Imparting the knowledge about different food safety laws.						2							1		1

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Food Safety Lab XVIII	**Subject Code**	**Semester: 6th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO.1 Performing various tests for preparation of selective and complex media.	1														1
CO2	CO.2 Creating the ability of handling tools for microbiological tests.					3										1
CO3	CO.3 Imparting the knowledge about different methods of staining and its use in food safety.						3					1				1
CO4	CO.4 Aware students about the importance of personal hygiene and its assessment.							2								
CO5	CO.5 Familiarize the students about detection of physical and chemical hazard in food.					2										

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Food Quality Management	**Subject Code**	**Semester: 6th**
Credit: 4	**L T P 400**	**Duration: 60 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO.1 Aware students about quality concepts, quality perception, quality attributes of foods.	3												3		
CO2	CO.2 Familiarize students to the concepts of quality management	3					2									
CO3	CO.3 Imparting the knowledge about food contamination, heavy metals, pesticide residues, antibiotics, agrochemicals, veterinary drug residues, environmental pollutants.							3								
CO4	CO.4 Understanding the need of food additives in food processing and preservation.			2										1		1
CO5	CO.5 Providing the knowledge of various freezing methods used in food industries.					1									1	1

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%

Subject : Food Quality Management Lab XIX	**Subject Code**	**Semester: 6th**
Credit: 2	**L T P 004**	**Duration: 30 Hrs.**

COs	Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	CO.1 Understanding the concept of qualitative analysis of various milk products.	3				1								1		1
CO2	CO.2 Familiarize students with quality inspection of cereals, pulses and spices.					2										
CO3	CO.3 Creating the ability to determine various contaminants in water.		3			1										
CO4	CO.4 Providing a platform for quality testing of various food products.					3										1
CO5	CO.5 Imparting the knowledge about insecticides and heavy metals present in food.							2								

Enter Correction levels 1, 2 or 3 as defined below:

1. Slight (Low) - upto 30% 2. Moderate (Medium) – above 30% and upto70% 3. Substantial (High) – above 70%