KU1DSCFTY101: FUNDAMENTALS OF FOOD TECHNOLOGY

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
I	DSC A1	100-199	KU1DSCFTY101	3+1	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
3	2	0	25L + 10P	50L + 15P	100	2

COURSE DESCRIPTION:

Food technology encompass fundamental concepts essential for understanding the production, processing, and preservation of food. It includes knowledge of food chemistry, which explores the composition and reactions of food components like proteins, carbohydrates, lipids, vitamins, and minerals. It aims to foster a comprehensive understanding of food, nutrition, composition of different food, food and future, research institutions and journals.

Course Prerequisite: Basic knowledge in nutrients gained during a +2 level.

COURSE OUTCOMES:

	Expected Outcome	**Learning Domains**
CO1	Know the relationship between food, nutrition and functional foods.	U
CO2	To Remember the basic Food groups like cereals, pulses, oilseeds, fruits vegetables, spices, meat, fish, poultry, sea food, milk and dairy products.	R
CO3	Apply the scientific method of enquiry as it relates to the measurement of sensory, chemical and physical properties of foods	Ap
CO4	To develop an insight among the students about the existing modern techniques and their applications in food processing preservation.	c

Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)

Mapping of Course Outcomes to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO8
CO 1				✔	✔			✔
CO 2							✔	✔
CO 3				✔				
CO 4							✔	

COURSE CONTENTS

Contents for Classroom Transaction:

Module	Description	Teaching Hours
	INTRODUCTION TO FOOD NUTRITION	
1	**FOOD SCIENCE AND FSSAI** a) Definition and Possibility of Food science and technology, Functions of food, Food Groups. b) FSSAI **FOOD AND NUTRITION** a) Food as a source of nutrition NUTRIENTS a) Water, Carbohydrates, Proteins, Lipids, b) Vitamins and minerals c) Food is more than nutrients **FOOD PRESERVATION** 1. a) Principles	15
	COMPOSITION AND NUTRITIVE VALUE	
2	1. Wheat and Rice – Structure 2. Pulses and legumes 3. Nuts and Oilseeds 4. Milk 5. Egg – Structure 6. Flesh foods (Meat, Poultry and Fish) 7. Fruits and Vegetables – Classification 8. Spices and Plantation products – Classification 9. Phytonutrients	15
	FOOD AND THE FUTURE	

3	1. GM foods, Organic Food 2. Functional food – Nutraceuticals, Probiotics and Prebiotics 3. NPD (New Product Development) 4. Major Sectors of Food Processing Industry, National and International Research Institutes – CFTRI, DFRL, NIFTEM, CIFT, NDRI	10
	PRACTICAL IN FOOD TECHNOLOGY	
4	1. Standardisation of NaOH 2. Standardisation of HCl 3. Qualitative test for carbohydrates – Molisch's test, Benedict's test, Iodine test, Anthrone test, Selivanoff's test. 4. Specific reactions of reducing sugars. Benedict's test, Fehling's test, picric acid test, ferricyanide test. Seliwanoff's test and osazone reaction of sugars. 5. Qualitative Test of Proteins (Biuret test, Lowry's test, xanthoproteic test, Millon's test) 6. Sensory evaluation 7. Industrial visit	30
5	**Teacher Specific Module**	5
	Directions: Sensory evaluation of food	

Essential Readings

1. Potter N, Hotchkiss JH. Food Science. CBS publishers and distributers
2. S. Manany, N S. Swamy Food Facts and Principles. New Age International Publishers
3. Murano, Peter S. Understanding Food Science and Technology. Thomson
4. Sumati R Mudambi, Rajagopal M V. Fundamentals of Food and Nutrition. New Age International Publishers
5. Shubhangini A Joshi. Nutrition and Dietetics. Tata McGraw Hill Education Private Limited
6. Vijaya Khader. Text Book of Food Science and Technology. ICAR

Suggested Readings:

1. Food Science by N Potter
2. Food Science by b. Srilakshmi

Assessment Rubrics:

Theory

Evaluation Type		Marks
End Semester Evaluation L		50
Continuous Evaluation L		25
a)	Test Paper- 1	5
b)	Test Paper-2	5
c)	Assignment	5
d)	Seminar	10
e)	Viva-Voce	5
Total L		75

Any components from the above table can be taken for CE not exceeding 15 Marks. Teacher specific module is evaluated for 10 marks.

Practical's

Evaluation Type		Marks
End Semester Evaluation P		15
Continuous Evaluation P		10
a)	Practical Test - 1	5
b)	Practical Test -2	5
c)	Record	5
d)	Lab skill	10
e)	Regularity	5
f)	Viva-Voce	5
g)	Report writing	5
Total		25

Any components from the above table can be taken for CE not exceeding 10 Marks