

**DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE (AUTONOMOUS)**

**PERAMBALUR – 621 212.**

**B.TECH. FOOD TECHNOLOGY**

**REGULATIONS 2023 (UPDATED ON SEPTEMBER 2024)**

**CHOICE BASED CREDIT SYSTEM**

**CURRICULUM FOR SEMESTERS I TO VIII**

**SEMESTER – I**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	IP3151	Induction Programme		-	-	-		0
2	U23HST11	Communicative English	HSMC	3	0	0	3	3
3	U23MAT12	Matrices and Calculus	BSC	3	1	0	4	4
4	U23CYT14	Chemistry for Engineering and Technology	BSC	3	0	0	3	3
5	U23PHT13	Physics for Engineers and Technologists	BSC	3	0	0	3	3
6	U23GET16	Engineering Graphics	ESC	3	1	0	4	4
7	GE3152	தமிழர் மரபு /Heritage of Tamils	HSMC	1	0	0	1	1
<b>PRACTICALS</b>								
8	U23HSP12	English Laboratory	HSMC	0	0	2	2	1
9	U23BSP11	Physics and Chemistry Laboratory	BSC	0	0	4	4	2
10	U23GEP14	Engineering Practices Laboratory	ESC	0	0	4	4	2
<b>TOTAL</b>				<b>16</b>	<b>2</b>	<b>10</b>	<b>28</b>	<b>23</b>

**SEMESTER- II**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	U23MAT22	Statistics and Numerical methods	BSC	3	1	0	4	4
2	U23HST21	Professional English	HSMC	3	0	0	3	2
3	U23PHT26	Physics of Materials	BSC	3	0	0	3	3
4	U23GET15	Problem Solving and Python Programming	ESC	3	0	0	3	3
5	U23EET25	Basic Electrical, Electronics and Instrumentation Engineering	ESC	3	0	0	3	3
6		NCC credit course Level 1		2	0	0	2	2*
7	GE3252	தமிழரும் தொழில் நுட்பமும் /Tamil and Technology	HSMC	1	0	0	1	1
<b>PRACTICALS</b>								
8	U23EEP24	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ESC	0	0	4	4	2
9	U23HSP22	Communication Laboratory	EEC	0	0	4	4	2
10	U23GEP13	Problem Solving and Python Programming Laboratory	ESC	0	0	4	4	2
<b>TOTAL</b>				<b>16</b>	<b>1</b>	<b>12</b>	<b>29</b>	<b>22</b>

**SEMESTER- III**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	U23MAT31	Transforms and Partial Differential Equations	BSC	3	1	0	4	4
2	U23FTT31	Food Process Calculations	PCC	3	0	0	3	3
3	U23FTT32	Biochemistry and Nutrition	PCC	3	0	0	3	3
4	U23FTT33	Unit operations in food processing	PCC	3	0	0	3	3
5	U23FTT34	Post-Harvest Engineering	PCC	3	0	0	3	3
6	U23GET41	Environmental Sciences and Engineering	HSMC	3	0	0	3	2
<b>PRACTICALS</b>								
7	U23FTP31	Biochemistry and Nutrition Laboratory	PCC	0	0	4	4	2
8	U23FTP32	Unit operations in food processing Laboratory	PCC	0	0	4	4	2
<b>TOTAL</b>				<b>18</b>	<b>1</b>	<b>8</b>	<b>27</b>	<b>22</b>

**SEMESTER – IV**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	U23MAT42	Probability And Operations Research	BSC	3	1	0	4	4
2	U23FTT41	Food Chemistry and Preservation.	PCC	3	0	0	3	3
3	U23FTT42	Food Microbiology	PCC	3	0	0	3	3
4	U23FTT43	Properties of food materials	PCC	3	0	0	3	3
5	U23FTT35	Thermodynamics in food industries	PCC	3	0	0	3	3
6	U23GET61	Human Values and Ethics	HSMC	3	0	0	3	2
<b>PRACTICALS</b>								
8	U23FTP41	Food Chemistry and Preservation Laboratory	PCC	0	0	4	4	2
9	U23FTP42	Food Microbiology Laboratory	PCC	0	0	4	4	2
10	U23HSP41	Communication Skills	EEC	0	2	2	4	2
<b>TOTAL</b>				<b>18</b>	<b>2</b>	<b>10</b>	<b>30</b>	<b>24</b>

**SEMESTER V**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	U23FTT51	Food Analysis	PCC	3	0	0	3	3
2	U23FTT52	Heat and Mass transfer in Food Processes	PCC	3	1	0	4	4
3		Professional Elective I	PEC	3	0	0	3	3
4		Professional Elective II	PEC	3	0	0	3	3
5		Professional Elective III	PEC	3	0	0	3	3
6		Open Elective	OEC	3	0	0	3	3
<b>PRACTICALS</b>								
7	U23FTP51	Food Analysis Laboratory	PCC	0	0	4	4	2
8	U23FTP52	Heat and Mass transfer in food processes Laboratory	PCC	0	0	4	4	2
9	U23FTP53	Workshop / Industrial Training	EEC	0	0	0	-	1
<b>TOTAL</b>				<b>21</b>	<b>0</b>	<b>8</b>	<b>29</b>	<b>24</b>

\*Two weeks workshop industrial training/internship during IV Semester Summer Vacation will be evaluated in V semester.

**SEMESTER – VI**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	U23FTT61	Refrigeration and Cold Chain Management	PCC	3	0	0	3	3
2	U23FTT62	Food Process Engineering	PCC	3	0	0	3	3
3	U23FTT63	Entrepreneur and Start ups in Food Sectors	EEC	3	0	0	3	2
4		Professional Elective IV	PEC	3	0	0	3	3
5		Professional Elective V	PEC	3	0	0	3	3
6		Elective Management	HSMC	3	0	0	3	3
7		Open Elective	OEC	3	0	0	3	3
<b>PRACTICALS</b>								
7	U23FTP61	Food Process Engineering Laboratory	PCC	0	0	4	4	1.5
8	U23FTP62	Baking and Confectionery laboratory	PCC	0	0	4	4	1.5
9	U23FTP63	Village Adoption **	MCC	0	1	1	2	1
10	U23FTP64	Industrial Training/Internship – I*	EEC	0	0	0	0	0
<b>TOTAL</b>				<b>21</b>	<b>1</b>	<b>9</b>	<b>29</b>	<b>23</b>

\*Two weeks Industrial training/Internship during VI Semester Summer Vacation will be evaluated in VII semester.

**SEMESTER – VII**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	U23FTT71	Food plant layout and Economics	PCC	3	0	0	3	3
2	U23FTT72	Dairy Technology	PCC	3	0	0	3	3
3		Professional Elective VI	PEC	3	0	0	3	3
4		Open Elective	OEC	3	0	0	3	3
5		Open Elective	OEC	3	0	0	3	3
7	U23FTP71	Dairy Technology Laboratory	PCC	0	0	4	4	2
8	U23FTP72	Mini-project	PCC	0	0	4	4	2
9	U23FTP73	Industrial Training/Internship – II	EEC	0	0	-	-	1
<b>TOTAL</b>				<b>15</b>	<b>0</b>	<b>8</b>	<b>23</b>	<b>20</b>

\*Two weeks Industrial training/Internship during VI Semester Summer Vacation will be evaluated in VII semester.

**SEMESTER – VIII**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	U23FTP81	Project work	PCC	0	0	20	20	10
<b>TOTAL</b>				<b>0</b>	<b>0</b>	<b>20</b>	<b>20</b>	<b>10</b>

**MANAGEMENT ELECTIVE**

S.N O.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	U23GET71	Principles of Management	HSMC	3	0	0	3	3
2.	U23GET72	Total Quality Management	HSMC	3	0	0	3	3
3.	U23GET73	Engineering Economics and Financial Accounting	HSMC	3	0	0	3	3
4.	U23GET74	Human Resource Management	HSMC	3	0	0	3	3
5.	U23GET75	Knowledge Management	HSMC	3	0	0	3	3
6.	U23GET76	Industrial Management	HSMC	3	0	0	3	3

**VERTICAL I: FOOD PROCESSING TECHNOLOGY**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	U23FTV11	Fruits and Vegetables Processing Technology	PEC	3	0	0	3	3
2.	U23FTV12	Baking and Confectionery Technology	PEC	3	0	0	3	3
3.	U23FTV13	Plantation and Spices Technology	PEC	3	0	0	3	3
4.	U23FTV14	Technology of Cereals, Pulses and Oil Seeds	PEC	3	0	0	3	3
5.	U23FTV15	Meat, Fish and Poultry Processing	PEC	3	0	0	3	3
6.	U23FTV16	Food Packaging Technology	PEC	3	0	0	3	3

**VERTICAL II: FOOD ANALYSIS AND FOOD SAFETY**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	U23FTV21	Introduction to Food analysis	PEC	3	0	0	3	3
2.	U23FTV22	Instrumental Techniques for Food Analysis	PEC	3	0	0	3	3
3.	U23FTV23	Sensory Evaluation of Foods	PEC	3	0	0	3	3
4.	U23FTV24	Principles Of Food Safety	PEC	3	0	0	3	3
5.	U23FTV25	Food Safety and Quality Control	PEC	3	0	0	3	3
6.	U23FTV26	Food laws- Indian and International	PEC	3	0	0	3	3

**VERTICAL III: NEXT GENERATION TECHNOLOGIES IN FOOD INDUSTRIES**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	U23FTV31	High performance computing	PEC	3	0	0	3	3
2.	U23FTV32	Food materials science	PEC	3	0	0	3	3
3.	U23FTV33	Food structuring techniques	PEC	3	0	0	3	3
4.	U23FTV34	Concepts on Experimental design and modelling	PEC	3	0	0	3	3
5.	U23FTV35	Statistical tool in data analysis	PEC	3	0	0	3	3
6.	U23FTV36	Internet of things in Food and Agriculture	PEC	3	0	0	3	3

### VERTICAL IV: FOOD BIOTECHNOLOGY

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	U23FTV41	Introduction to Food Biotechnology	PEC	3	0	0	3	3
2.	U23FTV42	Enzymes in Food and feed industry	PEC	3	0	0	3	3
3.	U23FTV43	Food fermentation technology	PEC	3	0	0	3	3
4.	U23FTV44	Biological instrumentation and Process control	PEC	3	0	0	3	3
5.	U23FTV45	Food allergens and toxicology	PEC	3	0	0	3	3
6.	U23FTV46	Genetic engineering and Genetically modified foods	PEC	3	0	0	3	3

	<b>Vertical 1 Food Processing Technology</b>	<b>Vertical 2 Food analysis and Food safety</b>	<b>Vertical 3 Next Generation Technologies in food industries</b>	<b>Vertical 4 Food Biotechnology</b>
Professional Elective I	Fruits and Vegetables Processing Technology	Analysis of food products	High performance computing	Introduction to Food Biotechnology
Professional Elective II	Baking and Confectionery Technology	Instrumental Techniques for Food Analysis	Food materials science	Enzymes in Food and feed industry
Professional Elective III	Plantation and Spices Technology	Sensory Evaluation of Foods	Food structuring techniques	Food fermentation technology
Professional Elective IV	Technology of Cereals, Pulses and Oil Seeds	Principles of Food Safety	Concepts on experimental design and modelling	Biological instrumentation and Process control
Professional Elective V	Meat, Fish and Poultry Processing	Food Safety and Quality Control	Statistical tool in data analysis	Food allergens and toxicology
Professional Elective VI	Food Packaging Technology	Food laws- Indian and International	Internet of things in Food and Agriculture	Genetic engineering and Genetically modified foods

**OPEN ELECTIVES**

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1	U23FTO11	Transport Phenomena in Food Processing	OEC	3	0	0	3	3
2	U23FTO12	Food Quality and Safety Engineering	OEC	3	0	0	3	3
3	U23FTO13	Storage Engineering and Handling of Agricultural Products	OEC	3	0	0	3	3
4	U23FTO14	Fundamentals of Food Processing	OEC	3	0	0	3	3
5	U23FTO15	Agri Business Management and Retail marketing	OEC	3	0	0	3	3
6	U23FTO22	Nutraceuticals	OEC	3	0	0	3	3
7	U23FTO23	Innovative Packaging of Dairy Products	OEC	3	0	0	3	3
8	U23FTO24	Technology of Food Colors and Flavors	OEC	3	0	0	3	3
9	U23FTO31	Nano Technology in Food Systems	OEC	3	0	0	3	3
10	U23FTO33	Traditional Food	OEC	3	0	0	3	3
11	U23FTO34	Nutrition and Healthy Life	OEC	3	0	0	3	3
12	U23FTO35	Food Informatics	OEC	3	0	0	3	3
13	U23FTV23	Sensory Evaluation of Foods	OEC	3	0	0	3	3
16	U23FTV24	Principles of Food Safety	OEC	3	0	0	3	3
14	U23FTV32	Food materials science	OEC	3	0	0	3	3
15	U23FTV36	Internet of things in Food and Agriculture	OEC	3	0	0	3	3

**SUMMARY OF CREDITS**

<b>B. TECH FOOD TECHNOLOGY</b>											
<b>S. No</b>	<b>Subject Area</b>	<b>Credits Per Semester</b>								<b>Total Credits</b>	<b>Percentage (%)</b>
		<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>	<b>VII</b>	<b>VIII</b>		
<b>1</b>	<b>HSMC</b>	5	3	2	2	-	3	-	-	15	8.93
<b>2</b>	<b>BSC</b>	12	7	4	4	-	-	-	-	27	16.07
<b>3</b>	<b>ESC</b>	6	10	-	-	-	-	-	-	16	9.52
<b>4</b>	<b>PCC</b>	-	-	16	16	11	9	10	10	72	42.86
<b>5</b>	<b>PEC</b>	-	-	-	-	9	6	3	-	18	10.71
<b>6</b>	<b>OEC</b>	-	-	-	-	3	3	6	-	12	7.14
<b>7</b>	<b>EEC</b>	-	2	-	2	1	2	1	-	8	4.76
<b>Total</b>		<b>23</b>	<b>22</b>	<b>22</b>	<b>24</b>	<b>24</b>	<b>23</b>	<b>20</b>	<b>10</b>	<b>168</b>	<b>100</b>