GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING SYLLABUS

Subject Code : 3135102

Subject Name : Introduction to Food Engineering & Technology

WEF Academic Year :	2022-23
Semester :	3
Category of the Course :	Professional Core

Prerequisite : Nil

Rationale : The main objective of introducing this subject in the degree course of food processing technology is to expose the student with fundamental knowledge on processing and preservation of foods. The students will also get exposed to fundamentals of heat transfer and mass transfer and present status of food industries in India.

Course Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
				Theory		Practical		
L	T	PR	C	ESE (E)	PA(M)	ESE (V)	PA (I)	
4	0	2	5	70	30	30	20	150

Course Content :

Sr. No.	Course Content	No. of Hours
1	**Engineering units and Dimensions** Base units, Derived units and Supplementary units	03
2	**Indian Food Industry** Present status, opportunities and challenges, sectors of Indian food industry, government initiatives for growth of food industry.	10
3	**Fundamentals of Mass and Energy balance** Application of mass and energy balances in food engineering operations	08
4	**Units Operations** Equipment and Machinery deployed in food processing Industry, Cleaning, Grading, Peeling, Cutting Balancing, Pulping, Size reduction, Separation and Drying	07
5	**Food Deterioration, Preservation and Processing** Basic concepts, factors affecting the food deterioration and different preservation techniques	11
6	**Food Standards and Quality Evaluation** Regulatory aspects of food marketing, need for evaluation , methods of food evaluation	03
7	**Steam Tables, Psychometric Chart** Basic methods and applications	04

Reference Book :

1. Fundamentals of Food Process Engineering by R. T. Toledo
2. Food Engineering Operations by Brennan and Cowell
3. Food Process Engineering by Heldman and Singh
4. Intro to Food Process Engineering by P. G. Smith
5. Transport Process & Unit Operations by Geankoplis

Course Outcome :

After Completion of the Course, Student will able to :

No.	Course Outcomes
CO-1	Get acquainted with the status and scope of Indian food industry.
CO-2	Understand the basic engineering principles involved in processing of food.
CO-3	Know the basic principles of food spoilage and the methods of food preservation.
CO-4	Get aware about the mass and energy balances in various food processing operations.

Suggested Course Practical List :

List of Laboratory/Learning Resources Required :

Open Source websites:

http://foodscience.uark.edu/
http://www.sciencedirect.com/science/book/
http://www.ucc.ie/en/ace-dfsct/

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