



## FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2022-23

**Programme:** Bachelor of Technology (Food Processing Technology)

**Semester:** VII

**Course Code:** 202070703

**Course Title:** Technology of Fruits and Vegetable Processing

**Course Group:** Professional Core Course

**Course Objectives:** This subject is aimed to develop an understanding in processing techniques and skills in handling equipment/machines used for preservation and value addition of perishables like fruits and vegetables.

### Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
Lecture	Tutorial	Practical		Theory		J/V/P*		Total
				Internal	External	Internal	External	
3	0	2	4	50/18	50/17	25/9	25/9	150/53

\* J: Jury; V: Viva; P: Practical

### Detailed Syllabus:

Sr.	Contents	Hours
1	<b>Physiology:</b> Maturity/harvesting indices, Post-harvest plant processes like respiration, photosynthesis and ripening, Physicochemical changes during ripening.	10
2	<b>Canning:</b> Canning process of fruits and vegetable, precautions of fruits and vegetables for canning operations, Spoilage factors and indicators of canned foods. Discoloration of canned foods and remedies.	10
3	<b>Fruit juice &amp; beverages:</b> Methods of fruit juice extraction, methods of juice clarification, types of fruit beverages, regulatory specifications and processing.	09
4	<b>Tomato Processing:</b> Process of tomato juice extraction, concentrate, puree and ketchup. Critical points of processing, role of ingredients and regulatory specifications of the tomato based products.	08
5	<b>Processing in the form of sugar base products:</b> Types of Jam, Jelly & Marmalade and process. Role of ingredients, ideal characteristics, gel formation theories, defects & remedies.	08
	Total	45



### List of Practicals / Tutorials:

1	To determine quality of brinjal.
2	Determine blanching adequacy of fruits and vegetables
3	Determination of Waste index
4	Preparation of fruit jam
5	Preparation of fruit jelly
6	Preparation of beverages
7	Preparation of tomato ketchup
8	Preparation of fruit sauce
9	Preparation of fruit toffee
10	Preparation of pickles
11	Preparation of tutti fruity

### Reference Books:

1	Post Harvest Physiology of Perishable Plant Products. By Stanley J. Kays. CBS.
2	Preservation of Fruits and Vegetables. By Girdharilal, Sidhappa G.S. and G. L. Tondon.
3	Commercial Fruits and Vegetables Products, By Cruess W.V.
4	Technology of Juice Manufacture, By Tressler.

### Supplementary learning Material:

1	<a href="http://www.fao.org/">http://www.fao.org/</a>
2	<a href="http://www.agricoop.nic.in">www.agricoop.nic.in</a>
3	<a href="http://www.apeda.gov.in">www.apeda.gov.in</a>

### Pedagogy:

- Direct classroom teaching
- Audio Visual presentations/demonstrations
- Assignments/Quiz
- Continuous assessment
- Interactive methods
- Industrial/ Field visits
- Course Projects

### Internal Evaluation:

The internal evaluation comprised of written exam (40% weightage) along with combination of various components such as Certification courses, Assignments, Mini Project, Simulation, Model making, Case study, Group activity, Seminar, Poster Presentation, Unit test, Quiz, Class Participation, Attendance, Achievements etc. where individual component weightage should not exceed 20%.

### Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks in %						R: Remembering; U: Understanding; A: Applying; N: Analyzing; E: Evaluating; C: Creating
R	U	A	N	E	C	
18%	22%	18%	20%	22%	0%	

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.



**Course Outcomes (CO):**

Sr.	Course Outcome Statements	%weightage
CO-1	Students will acquaint the knowledge about the physiology of the fruits and vegetables.	25
CO-2	Students will have the in depth knowledge about the unit operations of canning and its quality.	25
CO-3	Students will able to develop the skills of juice extraction and clarification and to prepare fruit based beverages.	17
CO-4	Students will have the in depth knowledge and quality of various tomato products.	15
CO-5	Students will learn the various processing aspects of jams, jelly and marmalade.	18

**Curriculum Revision:**

Version:	2
Drafted on (Month-Year):	June-2022
Last Reviewed on (Month-Year):	
Next Review on (Month-Year):	June-2025