



GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING SYLLABUS

Subject Code : 3155108

Subject Name : Millets Processing and Value Addition

WEF Academic Year :	2023-24
Semester :	5
Category of the Course :	Open Elective

Prerequisite:Nil

Rationale: Millets are important nutri-cereal crops cultivated by farmers in the adverse environment conditions. These climate resilient crops are rich in nutrition and are a guaranteed remunerate crop for millions of poor farmers and their livelihood. The importance of millet crops was visualized by FAO and declared Year 2023 as the International Year of Millets.

Course Scheme:

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR		Theory		Practical		
			ESE (E)	PA(M)	ESE (V)	PA (I)		
3	0	2	4	70	30	30	20	150

Course Content:

Sr. No.	Course Content	No. of Hours	% of Weightage
1	Introduction to millets: types & Nutritional Benefits: What are millets, Types & Varieties, Positive & Neutral Millets, Why include millet in our diet, Identifying polished & unpolished millets , How to store millets , Health benefits of Indian millets, Environmental benefits of millets, Millets consumption - DO's & DON'Ts	12	20
2	Millet Processing : Millet Cleaning, Millet Dehulling, Millet Milling, Millet Sorting and Grading, Millet Packaging and Storage, Millet Quality Parameters, Millet Quality Control Procedures	10	20
3	Ready To Eat & Ready To Cook products & value-added products: Ready-to-eat and unfastened millet difference, Product development of millet value-added products , Industrial uses of RTE millets , Market comparison for RTE millet	12	20
4	Millets processing business setup : Product development and marketing strategies, Machinery in millets (detailed), Packaging, labeling, and branding, Important aspects for a Millet Entrepreneur, Competitive advantage and the right pricing	10	20
5	Subsidy Schemes & Govt. Initiatives for Millets : Useful Subsidy	12	20



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	schemes for millet business, Events that were launched, Initiatives taken by Government, Nutritional Security through Intensive, Millet Promotion POSHAN MISSION Abhiyan, Constitution of Task Forces (IYoM) 2023		
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Reference Book:

1. Millets - The Trending Ancient Grains: Millets Book by Dr. Kruti S. Dhirwani
2. Handbook of Millets - Processing, Quality, and nutrition status by C. Anandharamakrishnan, Ashish Rawson, C. K. Sunil
3. Millets Properties, Processing, and Health Benefits" by Anil Kumar Siroha
4. Food Processing Technology: Principles and Practice, by P J Fellows, Woodhead Publishing Limited, CambridgeEngland

Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	RBT Level*
01	Nutritional, quality management and value addition in millets	RM
02	The purpose of this course is to provide comprehensive information about millets	UN
03	Intellectual property management and technology commercialization in millets	AN
04	Marketing opportunities, Entrepreneurship and linkages with FPOs	AP

*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

Suggested list of tutorials:

- 1) Millet cooking recipes & techniques for snacks; Smoothies, Dosa, Dhokla, Upma, Instant Idli
- 2) Special kitchen tips on utensils, oils, salts, etc.
- 3) Cooking practicals of millet-based recipes on Cookies, Bread
- 4) Cooking practicals of millet-based recipes on Samosa, Thepla, Smoothie
- 5) Market analysis, demand for millet-based products
- 6) Millets in food industries, farmer producer company
- 7) Discussions with successful entrepreneurs on millet business

Open-Source websites:

- 1) NPTEL
- 2) https://www.millets.res.in/millets_info.php
- 3) <http://www.sciencedirect.com/science/book/>
- 4) <http://www.ucc.ie/en/ace-dfsct/>

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