



GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering

Subject Code: [3171402](#)

Semester – VII

Subject Name: Food Rheology and Sensory Evaluation

Type of Course Professional Core Course

Prerequisite Nil

Rational: Food being bio material its property changes with time and quality deteriorate at different pace in the different environment. The study of this will help for maintain the quality for longer period and acceptable to the mass.

Teaching Scheme & Examination Scheme

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ES (E)	PA (M)	ESE (V)	PA (I)	
2	0	2	3	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs
1	Basic rheological concept: Stress-strain curve for food material, Newton's law of viscosity, Classification of rheological behavior, Viscoelastic behavior, Rheological Models like Maxwell, Kelvin, Burger Model	06
2	Color : Color & Light, Color Measuring equipments spectrophotometer, Colorimeters, CIE (XYZ and L*,a*,b*) color system, Hunter Lab color space	05
3	Sensory Evaluation: Basic concept, Application of sensory evaluation in food industry, Sensory evaluation laboratory designing and infrastructure requirement, Panel member requirement and selection, Factors affecting sensory verdict, Sensitivity test, Discrimination test, Qualitative and Quantitative test, Consumer Test, Score card development	09
4	Food texture: Basic concept, Principles of determining food texture, Texture measurement instrument	04
5	Applied Rheology: Textural attributes of fruits and vegetables, Rheology of bread, Rheology of Chocolate	06

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
25	35	15	10	15	

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Reference Books

1. Rheological Methods in Food Process Engineering by James F. Steffe, Publisher Freeman Press USA
2. Advances in rheology and Its Food Applications by J. Ahmed, P. Ptaszek, S. Basu. Publisher Woodhead



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Publishing.

3. Physical Properties of Plant and Animal Product by Mohsenin NN, Gordon and Beach Sciences Publisher
4. Sensory Properties of Food by Birch GC, breman JG and parker KJ, Allied Publisher
5. Sensory evaluation Techniques by Meilgard M, Civile GV and Carr BT CRC Press Inc.,
6. Sensory evaluation of Food by Piggot JR Elsevier Applied science
7. Guidelines for sensory analysis in food Product development and quality Control by carpenter R, Lyon DH and Hasdell TA ASPEN publishing

Course Outcome: At the end of this module, the student will be able to:

Sr. No.	CO statement	Marks % weightage
CO-1	Understanding of various rheological concepts & instruments and use to ascertain reproducible quality of the product	30
CO-2	Able to conduct and design sensory evaluation study of food products	40
CO-3	Understand the effect of processing parameters on rheological properties and quality of the food	30

List of Practical

1. Introduction to Sensory Evaluation
2. Determination of threshold value for sweet taste attribute of an individual and comparison of market samples for sweetness level
3. Determination of threshold value for salt taste attribute of an individual and comparison of market samples for saltiness level
4. Determination of threshold value for sour taste attribute of an individual and comparison of market samples for sourness level
5. Sensory Evaluation of food products by using Hedonic Rating test
6. Effect of fat type on cookie dough rheology
7. Designing of Consumer test questionnaire
8. Determination of viscosity of oil by red wood viscometer
9. Study of textural attributes of food products
10. Texture analysis of fruit using Lloyed texture analyzer

Major Equipments

1. Texture Analyzer
2. Red Wood viscometer

List of Open Source Software/learning website

- i) www.unaab.edu.ng
- ii) [www.onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1365-2621](http://www.onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-2621)
- iii) www.journals.elsevier.com/lwt-food-science-and.../open-access-articles/