Fundamentals of Food Rheology and Texture Analysis Training Course

Professional Development Training Course Outline

Category	Food processing and Technology	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Fundamentals of Food Rheology and Texture Analysis Training course is designed to provide participants with an in-depth understanding of the physical properties, behavior, and structural interactions of food materials. With food science and technology advancing rapidly, professionals in this sector must be equipped with modern techniques to analyze, evaluate, and innovate food products. This course integrates scientific principles of rheology with practical texture analysis applications, ensuring participants acquire both theoretical knowledge and hands-on skills. Strong focus areas include viscoelastic properties, flow behavior, sensory evaluation, and product quality assessment, all aligned with current industry standards and innovations.

This training program highlights the role of food rheology and texture analysis in driving product development, optimizing production processes, and ensuring consumer satisfaction. Participants will gain exposure to global case studies, real-world problem-solving, and advanced testing methods used in research and industry. By combining cutting-edge technology, laboratory simulations, and analytical tools, the course prepares learners to meet the growing demands of food innovation, quality assurance, and market competitiveness.

Programme Curriculum

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Course Objectives

1. Understand the fundamental principles of food rheology and texture analysis.
2. Explore the viscoelastic properties of food systems.
3. Analyze flow behavior and shear properties in food matrices.
4. Learn techniques for sensory evaluation and instrumental texture measurements.
5. Apply rheological concepts to food formulation and product development.
6. Identify the relationship between microstructure and food texture.
7. Interpret rheological data for process optimization and quality control.
8. Evaluate factors affecting consumer perception of food texture.
9. Gain practical experience with advanced rheometers and texture analyzers.
10. Study global case studies on food rheology and texture innovation.
11. Address industry challenges in standardizing texture measurements.
12. Apply rheological insights to food safety and shelf-life stability.
13. Develop strategies for integrating rheology and texture analysis into R&D pipelines.

Organizational Benefits

- Enhanced innovation in food product development.
- Improved consistency and quality of processed foods.
- Better alignment with international food safety standards.
- Increased consumer satisfaction through texture optimization.
- Reduced production costs via efficient process control.
- Strengthened competitive advantage in food markets.
- Greater accuracy in food testing and quality assurance.
- Enhanced research capabilities within the organization.
- Improved collaboration between R&D and quality teams.
- Strengthened reputation as a scientifically advanced organization.

Target Audiences

1. Food technologists
2. Food scientists
3. Quality assurance professionals
4. Research and development teams
5. Food safety specialists
6. Product developers
7. Sensory analysts
8. Academic researchers

Course Duration: 5 days

Course Modules

Module 1: Introduction to Food Rheology

- Definition and importance of food rheology
- Key concepts of stress, strain, and viscosity
- Flow behavior of Newtonian and non-Newtonian foods
- Relevance of rheology in food processing
- Laboratory demonstrations on basic rheological testing
- Case study: Rheological properties of dairy-based beverages

Module 2: Principles of Texture Analysis

- Importance of food texture in consumer acceptance
- Instrumental vs. sensory methods of texture measurement
- Common texture parameters: hardness, cohesiveness, adhesiveness
- Role of texture analyzers in food industries
- Practical demonstrations using texture profile analysis
- Case study: Texture analysis of baked products

Module 3: Viscoelastic Properties of Food Materials

- Definition of viscoelasticity in food systems
- Dynamic mechanical analysis (DMA) in food research
- Time-dependent deformation in viscoelastic foods
- Applications of viscoelastic properties in product stability
- Hands-on practice with oscillatory rheometry
- Case study: Viscoelasticity in confectionery products

Module 4: Microstructure and Food Texture Relationship

- Influence of food microstructure on textural properties
- Microscopy and imaging in food analysis
- Role of starch, proteins, and fats in texture development
- Linking molecular structure with sensory perception
- Practical demonstrations of microstructural analysis
- Case study: Microstructure of plant-based meat alternatives

Module 5: Flow Properties in Food Processing

- Flow curves and shear thinning/thickening behavior
- Impact of processing on flow characteristics
- Rheology of emulsions and suspensions
- Applications in mixing, pumping, and extrusion
- Practical demonstration of flow curve generation
- Case study: Flow properties of tomato-based sauces

Module 6: Sensory Evaluation and Consumer Perception

- Principles of sensory evaluation in food science

- Methods of sensory panel testing
- Linking sensory data with instrumental texture analysis
- Role of consumer perception in product success
- Practical demonstrations of sensory testing methods
- Case study: Consumer perception of frozen desserts

Module 7: Advanced Rheological Techniques

- Frequency sweep and creep-recovery tests
- Thixotropy and rheological hysteresis
- Applications in gel and emulsion systems
- Advanced instrumentation in rheological testing
- Practical training with rheometers
- Case study: Advanced rheology of gluten-free doughs

Module 8: Applications in Food Innovation and Quality Control

- Use of rheology in product formulation and optimization
- Texture as a critical quality parameter in processed foods
- Shelf-life evaluation using rheological techniques
- Addressing regulatory and standardization challenges
- Integrating rheology into R&D pipelines
- Case study: Quality control in dairy desserts

Training Methodology

- Interactive lectures with real-world applications
- Hands-on laboratory training with advanced equipment
- Group discussions and collaborative problem-solving
- Industry-based case studies and simulations
- Practical assignments with data analysis exercises

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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