Green Chemistry in Food Preservation and Processing 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

Green chemistry in food preservation and processing Training Course is increasingly becoming a central focus in sustainable food systems. With the rising demand for eco-friendly, safe, and efficient food processing techniques, industries are exploring innovative methods to reduce chemical residues and enhance food safety. This training course provides participants with the tools, knowledge, and methodologies to integrate green chemistry solutions into food preservation, ensuring compliance with modern regulatory standards and consumer expectations. Through in-depth modules, case studies, and practical insights, participants will learn to leverage sustainable technologies that improve shelf-life, reduce waste, and promote healthier production systems.

The program also focuses on bridging scientific research with industrial applications in food technology. By understanding concepts such as bio-preservation, enzymatic processing, nanotechnology applications, and biodegradable packaging, participants will acquire practical expertise to transform operations into sustainable systems. This training not only promotes environmental stewardship but also supports corporate responsibility, cost efficiency, and competitive advantage in the global food industry.

Programme Curriculum

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Course Objectives

1. To understand the fundamental principles of green chemistry in food preservation and processing.
2. To explore sustainable and innovative food preservation technologies.
3. To integrate eco-friendly packaging solutions for improved shelf-life.
4. To analyze enzymatic and bio-preservation techniques in food safety.
5. To examine nanotechnology applications in food processing.
6. To reduce chemical residues in food systems through sustainable practices.
7. To identify waste management strategies for food industries.
8. To assess the role of biotechnology in eco-friendly food processing.
9. To comply with global regulatory frameworks on food safety and sustainability.
10. To enhance product quality through natural preservatives.
11. To evaluate consumer trends driving green chemistry adoption.
12. To implement sustainable supply chain management in food industries.
13. To build actionable strategies for environmental responsibility in food preservation.

Organizational Benefits

- Enhanced compliance with global sustainability regulations.
- Improved food safety and quality standards.
- Increased market competitiveness through eco-friendly innovations.
- Reduced costs in chemical usage and waste management.
- Strengthened corporate reputation and consumer trust.
- Opportunities for new product development aligned with green technologies.
- Long-term sustainability in food supply chains.
- Reduced environmental footprint of production systems.
- Employee upskilling in advanced green chemistry applications.
- Strategic positioning in global markets emphasizing sustainability.

Target Audiences

- Food technologists
- Quality assurance professionals
- Research scientists in food industries
- Environmental sustainability officers
- Food safety regulators
- Supply chain managers
- Packaging and processing engineers
- Academic researchers and educators

Course Duration: 5 days

Course Modules

Module 1: Fundamentals of Green Chemistry in Food

- Introduction to green chemistry concepts in food industries
- Historical perspectives of chemical vs. green practices
- Sustainability goals and SDG linkages
- Chemical footprint reduction techniques
- Key drivers for green food systems
- Case Study: Transition from synthetic to natural preservatives

Module 2: Sustainable Food Preservation Techniques

- Bio-preservation and enzymatic methods
- Role of probiotics and natural antimicrobials
- Fermentation-based preservation practices
- Minimally processed food techniques
- Reduction of synthetic additives in processing
- Case Study: Lactic acid bacteria in dairy preservation

Module 3: Eco-friendly Packaging Solutions

- Biodegradable packaging innovations
- Active and intelligent packaging systems
- Nanomaterials in packaging applications
- Shelf-life improvement with eco-materials
- Consumer perception of sustainable packaging
- Case Study: Biodegradable films in fresh produce packaging

Module 4: Enzymatic and Biotechnological Approaches

- Enzymes in food preservation and processing
- Role of biotechnology in food safety
- Application of microbial enzymes
- Genetic engineering and green processing
- Future trends in biotech applications
- Case Study: Enzymatic browning control in fruits

Module 5: Nanotechnology in Food Systems

- Nano-encapsulation of bio-preservatives
- Nanosensors for food safety monitoring
- Role of nanomaterials in extending shelf-life
- Safety concerns and regulatory aspects
- Consumer acceptance of nano-products
- Case Study: Nano-encapsulated antioxidants in beverages

Module 6: Waste Reduction and Sustainable Management

- Food industry waste streams

- Valorization of food by-products
- Circular economy applications
- Composting and bio-energy solutions
- Role of life-cycle assessment in waste reduction
- Case Study: Valorization of fruit peels in food additives

Module 7: Regulatory Frameworks and Standards

- International food safety regulations
- Sustainability certifications and audits
- Standards for eco-friendly packaging
- Trade policies affecting green food exports
- Importance of compliance and traceability
- Case Study: Implementation of ISO 22000 in green processing

Module 8: Future Trends in Green Chemistry for Food Systems

- Consumer-driven trends in food sustainability
- Digital technologies in sustainable food systems
- Integration of AI in food processing
- Future of plant-based and alternative proteins
- Market outlook for green chemistry products
- Case Study: Plant-based meat preservation using natural extracts

Training Methodology

- Interactive lectures and presentations with industry experts
- Group discussions and peer-to-peer knowledge exchange
- Case study analysis and real-world examples
- Practical demonstrations and simulations
- Hands-on assignments for applied learning
- Post-training evaluation and feedback sessions

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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