Fats and Oils Technology and Processing Training Course

Professional Development Training Course Outline

Category	Food processing and Technology	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The global fats and oils industry is rapidly evolving with advanced food processing technologies, innovative oil extraction techniques, and sustainable refining practices. Fats and Oils Technology and Processing Training Course is designed to provide in-depth knowledge of fats and oils processing, covering the entire value chain from raw material selection, extraction, refining, modification, to product development. With the rise of plant-based oils, bio-based products, and sustainable food systems, professionals in the food and beverage industry must equip themselves with cutting-edge skills and insights.

This comprehensive training integrates scientific principles with real-world case studies to ensure practical understanding of processing technologies. Participants will learn about the chemical, physical, and nutritional aspects of fats and oils, along with quality assurance, safety, and regulatory compliance. The program emphasizes innovation, sustainability, and market trends, preparing learners to optimize production efficiency while meeting global consumer demands for healthier and eco-friendly edible oils and fats.

Programme Curriculum

Fats and Oils Technology and Processing Training Course

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Course Objectives

1. Understand fundamental principles of fats and oils chemistry.
2. Explore advanced oil extraction technologies and processes.
3. Analyze refining and modification methods for edible oils.
4. Examine fat crystallization and polymorphism.
5. Study hydrogenation, fractionation, and interesterification processes.
6. Assess food applications of fats and oils in bakery, dairy, and confectionery.
7. Identify quality control techniques and testing standards.
8. Evaluate global trends in plant-based oils and sustainable production.
9. Gain knowledge of by-product utilization and waste management.
10. Apply safety, health, and regulatory standards in oil processing.
11. Learn about edible oil fortification for nutritional benefits.
12. Enhance problem-solving skills with industrial case studies.
13. Develop strategies to improve efficiency in fats and oils processing plants.

Organizational Benefits

- Improved operational efficiency in fats and oils processing
- Adoption of sustainable production and waste reduction methods
- Enhanced compliance with international food safety regulations
- Increased product innovation and market competitiveness
- Development of skilled technical workforce
- Improved quality assurance and control systems
- Strengthened decision-making with data-driven insights
- Reduced production costs and increased profitability
- Greater adaptability to consumer demands and market trends
- Stronger organizational reputation and global market presence

Target Audiences

1. Food technologists
2. Oil mill operators
3. Quality assurance professionals
4. Food scientists and researchers
5. Product development managers
6. Nutritionists and dietitians
7. Food safety and regulatory officers
8. Food industry entrepreneurs

Course Duration: 10 days

Course Modules

Module 1: Introduction to Fats and Oils Technology

- Overview of fats and oils in food systems
- Importance of fats and oils in nutrition and health
- Classification of edible oils and fats
- Historical and global perspectives
- Role of fats and oils in food processing industries
- Case study: Global demand and supply chain in edible oils

Module 2: Chemistry of Fats and Oils

- Structure and function of lipids
- Fatty acid composition and properties
- Triglyceride chemistry
- Lipid oxidation and stability
- Nutritional implications of different fats
- Case study: Fatty acid profiling in edible oils

Module 3: Oilseeds and Raw Material Selection

- Common oilseeds and sources of fats
- Selection and grading of oilseeds
- Pre-treatment and preparation processes
- Importance of moisture and impurities control
- Impact of raw material on final product quality
- Case study: Quality evaluation of soybean oil

Module 4: Oil Extraction Technologies

- Mechanical pressing techniques
- Solvent extraction methods
- Emerging green extraction technologies
- Efficiency of extraction processes
- Factors affecting oil yield
- Case study: Solvent vs. mechanical extraction efficiency

Module 5: Refining of Oils

- Degumming, neutralization, and bleaching
- Deodorization process
- Physical vs. chemical refining
- Removal of impurities and contaminants
- Quality standards for refined oils
- Case study: Palm oil refining operations

Module 6: Modification of Fats and Oils

- Hydrogenation process and applications
- Fractionation techniques
- Interesterification processes
- Tailoring fat functionality for food products
- Impact of modifications on nutrition and stability

- Case study: Hydrogenated fats in margarine production

Module 7: Fat Crystallization and Polymorphism

- Mechanisms of fat crystallization
- Influence on texture and stability of food products
- Factors affecting polymorphism
- Applications in confectionery and bakery industries
- Importance in product shelf life
- Case study: Cocoa butter polymorphism in chocolate

Module 8: Applications in Food Industries

- Role of fats in bakery products
- Dairy product formulations
- Confectionery applications
- Frying oils and stability
- Functional fats for health-focused foods
- Case study: Trans-fat replacement in bakery fats

Module 9: Quality Control and Assurance

- Analytical techniques for fats and oils
- Peroxide value, iodine value, and acid value testing
- Sensory evaluation methods
- International quality standards
- Importance of traceability in production
- Case study: Implementing HACCP in oil processing plants

Module 10: Global Trends in Fats and Oils

- Rise of plant-based and alternative oils
- Sustainability and eco-friendly production
- Consumer demand for health-oriented oils
- Technological innovations in oil processing
- Future outlook of fats and oils industry
- Case study: Market growth of avocado and coconut oils

Module 11: By-product Utilization and Waste Management

- Use of oil cakes and residues
- Conversion to biofuels and bioproducts
- Recycling and energy recovery methods
- Circular economy in oil processing
- Environmental benefits of waste management
- Case study: Biodiesel production from used cooking oil

Module 12: Food Safety and Regulatory Compliance

- International food safety regulations
- HACCP principles in fats and oils processing
- Contaminants and safety risks

- Regulatory frameworks for edible oils
- Industry certification standards
- Case study: Food safety compliance in palm oil industry

Module 13: Edible Oil Fortification and Nutrition

- Importance of oil fortification in public health
- Micronutrients added to edible oils
- Process of fortification in oil refining
- Monitoring and evaluation systems
- Challenges in fortification programs
- Case study: Vitamin A fortification in edible oils

Module 14: Innovations in Oil Processing Technologies

- Nanotechnology in fats and oils
- Enzyme-assisted processing
- Cold-press extraction methods
- High-pressure processing in oils
- Role of biotechnology in oil modification
- Case study: Enzyme-assisted extraction of olive oil

Module 15: Industrial Case Studies and Best Practices

- Benchmarking global oil processing industries
- Efficiency improvements in oil plants
- Successful implementation of sustainable practices
- Lessons learned from industrial leaders
- Future challenges and opportunities
- Case study: Best practices in sunflower oil processing

Training Methodology

- Interactive lectures with multimedia presentations
- Hands-on case studies and group discussions
- Practical demonstrations of analytical methods
- Role-play scenarios for problem-solving
- Field visits or virtual tours of oil processing plants

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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